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BUREAU OF EDUCATION

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OPPORTUNITIES FOR STUDY  
AT AMERICAN GRADUATE SCHOOLS

By

GEORGE F. ZOOK

SPECIALIST IN HIGHER EDUCATION, BUREAU OF EDUCATION

AND

SAMUEL P. CAPEN

DIRECTOR OF THE AMERICAN COUNCIL ON EDUCATION



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## LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR.

BUREAU OF EDUCATION,

*Washington, May 31, 1921.*

SIR: With the close of the World War numerous students from foreign countries will doubtless avail themselves of the opportunity to pursue courses of study at American colleges and universities. Among those students will be an unusually large number who should be attracted by the superior advantages and facilities offered for the pursuit of graduate study at American institutions of higher learning. In order that these students may have some guide to the conditions of graduate study in this country and to the noteworthy facilities at the most important American universities, I have requested the division of higher education to prepare a circular to be entitled "Opportunities for Study at American Graduate Schools." I am transmitting this compilation herewith for publication as a bulletin of the Bureau of Education.

Respectfully submitted,

P. P. CLAXTON,  
*Commissioner.*

THE SECRETARY OF THE INTERIOR.

## OPPORTUNITIES FOR STUDY AT AMERICAN GRADUATE SCHOOLS.

### INTRODUCTION.

Foreign students are annually attracted to American higher institutions in large numbers. They are to be found in every type of college or university, pursuing courses of all sorts and of every degree of advancement. Professional courses in engineering, agriculture, dentistry, and medicine have enrolled the majority of them. This is evidently because of the belief that American institutions have developed methods of training in these and certain other technical lines which are more concrete and practical than those employed in the institutions of Europe and Latin America.

At the same time increasing numbers of students from other countries are following courses in pure science and the humanities in American colleges and graduate schools. Inquiries concerning the scope and conditions of work of this kind in the United States come more and more frequently to the Federal Government and to the officers of the various colleges and universities. Both American and foreign educators have, therefore, been led to consider carefully the desirability of encouraging this flow to the United States of students who seek general nonprofessional higher education. The consensus of opinion appears to be that while such movements tend to promote international understanding, and hence are desirable, the greatest benefits are likely to be reaped by those who come to the United States for advanced study after the completion of their general liberal training at home. Such students are more mature. They are better able to represent and interpret the spirit of their own nations, better able to comprehend the life and purposes of the United States, more likely to return to their own countries when the period of university training is ended.

Most States maintain normal schools for the training of teachers, or a more or less well-developed State university, or both. The normal schools and certain departments of the State universities articulate with the public high school in ways later to be described.

Alongside the public institutions various groups and individuals have founded elementary schools, high schools, academies,<sup>1</sup> normal schools, and colleges. The most extensive system of private schools is that under the control of the Roman Catholic Church. The total enrollment of the Catholic parochial schools was 1,633,599 in 1919. Other religious sects have also established institutions to provide education under denominational auspices. Both the religious schools and the private schools under denominational control parallel rather closely the amount and character of the training afforded by the public institutions of the same grade. These nonpublic institutions and systems are allowed perfect freedom of development under the laws of the country.

The foreign observer, noting chiefly the dissimilarities of the State systems, is at first inclined to think that a hopeless confusion of standards and organization must characterize American education. But the differences are after all superficial rather than fundamental. The same general types of institutions are to be found in every State, whether they all belong officially to the State system or not. Their interrelations are also essentially the same. There are still certain inequalities of educational standards, especially among higher institutions, but these are not so great nor so widespread as is often believed.

#### STANDARDS.

The principal reasons for the variation in the standards of higher education are perhaps already apparent, yet they should be briefly summarized because of their bearing on the whole plan and method of American education. The State educational systems have grown up independently of one another. If one takes account of the provisions for education made by a few of the colonial governments before the founding of the United States, the dates of establishment of the 49 systems of education have covered a period of something like two centuries and a half. In that time the social philosophy of the Nation has changed. The common conception of the part the State should play in fostering and controlling education has changed with it. According to a widely prevailing theory all grades of education, from the kindergarten to the university, should be supported and managed by the State or local government. In the relatively newer States of the West and Middle West this condition is realized. Higher and secondary institutions not under public control are either rare or nonexistent. The educational policy of the older States, on the other hand, had crystallized before the general acceptance of this theory. Here the responsibility for providing elementary and a certain amount

<sup>1</sup> The term "academy" is generally applied to a school of secondary grade.

#### STATE SYSTEMS.

of secondary education is felt to rest properly on the State, but high education is left, for the most part, to independent institutions founded under various auspices, principally religious, and subject to little or no public supervision.

Inevitable differences of standards sprang from these differences in methods of control. Moreover, a few of the States, particularly those of more recent origin and of sparse population and those impoverished by the Civil War of 1860-1865, have thus far found difficulty in providing adequate equipment for thorough university education and in enforcing the most severe scholastic requirements. In this latter group of States, also, the development of universities and colleges of the highest grade has been still further retarded by the inferiority of the lower schools which prepare students for advanced education.

There are, however, several counter influences at work tending to reduce these inequalities. Chief among them is the action of numerous national and sectional associations of school and university officers. For a number of years these associations have been engaged in defining standards of school and professional training and determining the appropriate scholastic requirements for degrees. In the sections of the country where education is best organized the recommendations of these associations are regarded as authoritative and are put into operation as speedily as possible. The educationally less favored sections are also striving to conform to the standards proposed by such bodies and are making increasingly rapid progress in this direction.

In elevating the standards of various types of institutions, principally in the fields of rural education and higher education, the recommendations of the United States Bureau of Education have also had wide influence.

To this group of students the offerings of American graduate schools should make an especially strong appeal. It is to this group that the present monograph is primarily addressed. It is believed that the opportunities for advanced study and research now available at American graduate schools compare favorably with the best to be found anywhere in the world.

### ORGANIZATION OF EDUCATION IN THE UNITED STATES.

#### STATE SYSTEMS.

The United States is a federation of 48 self-governing Commonwealths, each of which exercises independently all powers not specifically conferred upon the Federal Congress by the Constitution or derived by implication therefrom. Since the Constitution does



not provide for the control of education by the Federal Government, there is no national system; but the United States contains within its area 49<sup>2</sup> separate systems of education.

No two of the State systems are exactly similar, yet they possess certain common factors. For example, all States provide by law<sup>3</sup> for elementary education at public expense. The usual length of the public elementary school course is eight years. Children commonly enter at the age of 6 or 7 and finish at the age of 14 or 15. In all but three States school attendance during a part or all of this period is compulsory.<sup>4</sup> Public secondary schools, called high schools,<sup>5</sup> offering a course generally four years in length, are also maintained in every State. The high-school course is based on the elementary school course and is open to graduates of elementary schools or others of equivalent preparation.

The high school serves three main purposes. To the great mass of students who frequent it it offers four years of cultural and informational study designed to equip them for more intelligent and resourceful lives as citizens of a democracy. Its second purpose is to prepare students for various higher institutions. In the third place, a number of specialized public high schools fit young people for wage earning in trades and industries. In general, it may be said that the high school has tended more and more to adapt itself to the needs of the local community by introducing studies of a practical and vocational nature and by allowing its students increasing latitude in the choice of courses to be pursued.

Whether American education ever shall achieve complete uniformity in standards and methods of management is open to doubt. Uniformity is contrary to the genius of the Nation. The Americans are an individualistic people. Their educational systems and institutions have reflected this quality. These have maintained the right to expand as they choose and to adapt their courses to local needs, free from hampering restrictions. Their freedom is, in fact, one of the sources of their strength. Nevertheless, it may safely be said that there is now a national consensus of opinion as to what the standards of admission to and graduation from the principal types of institutions should be, that the standards agreed upon coincide in the main with those in force in the corresponding institutions of other leading nations, and that they are already maintained by the

<sup>2</sup> Including the District of Columbia, which is the seat of the Federal Government.

<sup>3</sup> The raising of the necessary money by taxation for the support of the schools and the administration of them are generally left to local communities—counties, towns, or districts. But local funds are often supplemented by State funds.

<sup>4</sup> The age of compulsory attendance is generally from 7 or 8 to 14 or 15. A few States require attendance up to 16 years.

<sup>5</sup> Not to be confused with the German Hochschule, an institution of university grade. The high school corresponds more nearly with the middle portion of the course in a German Gymnasium or Oberrealschule.



best institutions of the United States. Indeed, students from abroad will find in those educational centers to which they will probably be attracted unsurpassed facilities for advanced academic and professional training. The brief outline of the opportunities for graduate study in the United States presented in this pamphlet deals principally with conditions existing in these more prominent educational centers.

## EVOLUTION OF THE UNIVERSITY.

### THE COLLEGE.

An explanation of the prevailing organization of higher education in the United States properly begins with a description of the American college, an institution which has no exact counterpart in any other country.

Historically, the college is the oldest of American institutions. The first one, Harvard College, was founded in 1636 by the early English settlers in Massachusetts. Cambridge and Oxford furnished its prototypes. Following the example of these institutions, Harvard College was designed to give training in the liberal arts, principally Latin, Greek, philosophy, and mathematics. Most of its earlier graduates entered the Christian ministry. In fact, to supply properly trained young men for this profession was one of the chief objects sought in the foundation of Harvard and of the other colleges established during the first century of colonial life in the United States. Gradually, however, the purpose and character of the college changed. The more elementary stages of the subjects taught were given over to lower schools. New subjects were added to the curriculum. The college lost its theological bent without becoming a training school for other professions. It still offered courses in the liberal arts, leavened more and more by the introduction of the sciences, and bestowed upon those who completed these courses the degree of A. B.

Three very significant changes in the relation of the college to the scheme of higher education occurred during the nineteenth century. The first of these was the founding of the professional schools of theology, law, and medicine. Although students were, and to some extent still are, admitted to these schools without a previous college education, the tendency has been constantly growing to demand a college degree or at least a period of collegiate study as a prerequisite for entrance. The college has thus become in certain measure a preparatory school for those who contemplate a course of professional training.

The second change to which reference has been made was the development within the college of departments of pure and applied

science. By the middle of the nineteenth century the degree of B. S., granted for work done largely in the sciences, began to occupy a position of parity with the older degree of A. B.\* Gradually also these courses in science ramified further into courses in engineering. The engineering schools or divisions thus became coordinate parts of many colleges of liberal arts.

The third and most momentous change in the status of the college was brought about by the establishment in connection with certain colleges of graduate schools on the model of the faculties of philosophy of German universities. The graduate schools have grown up principally in the last 45 years; indeed, the movement received its first strong impetus with the founding of Johns Hopkins University, incorporated in 1867 and opened for instruction in 1876. (See p. 37.) The graduate schools offer to college graduates courses leading to the degrees of A. M. and Ph. D. and degrees of corresponding grade in the technical branches. They provide opportunities for advanced study in the arts and sciences and for research similar to those provided by the leading European universities.

#### THE UNIVERSITY PROPER.

The college is the nucleus from which all higher institutions of learning have sprung. Before the nineteenth century there were no universities in the modern sense of the word. With the rise of professional schools of theology, law, and medicine, most of which were outgrowths of colleges already established, American institutions began to approach university organization. The name "university" came also into common use to designate an institution composed of a college and one or more professional schools, each under the control of a separate faculty. German influence was the dominant force in American higher education for many years and the universities of the United States were deliberately molded to the German type. The establishment of the graduate schools marked the final step in this evolution, the four traditional faculties of the German university, theology, law, medicine, and philosophy, being thus represented.

But the modern American university is more complex in organization than its Germanic prototype. It has added other schools or divisions.<sup>†</sup> Schools of dentistry, of various branches of engineering, of agriculture, of veterinary medicine, etc., are now frequently

\* A number of other baccalaureate degrees have also been conferred, such as Ph. B., B. Ed., etc., but the present tendency is toward the two older degrees of A. B. and B. S., according as the subjects forming the basis of the curriculum are humanistic or scientific.

† In some institutions the various divisions are also called colleges, as, for example, college of medicine, college of education, etc.

included in a single university.\* The University of California, for instance, has 19 such schools or departments; the University of Chicago, 10; the University of Illinois, 13; and the University of Michigan, 8. As each new profession develops, a special division designed to give the training requisite for it is added to the university. In this manner, schools or colleges of commerce, of business administration, of domestic science, of ceramics, and of journalism have recently been established at a number of the larger universities. The process will undoubtedly continue with the further multiplication of the professions.

The term "university," however, has as yet no fixed connotation. The laws of the several States governing the incorporation of higher institutions vary greatly. Some require substantial assurance that an institution applying for charter will conform to the accepted standards of the designation which it seeks. In some States, on the other hand, it is possible to secure a university charter on the strength of prospects and good intentions alone. Even before the evolution of true universities, it was common for colleges offering nothing but a single course leading to the bachelor's degree to be chartered as universities. The name, therefore, antedated the thing. Many of these colleges still retain the name without having developed into universities. In certain sections of the country and in the minds of certain persons the college and the university are thus very naturally confused. No distinction is made between the two institutions. This confusion is the more readily understood if one recalls the fact that practically all the larger, thoroughly organized universities maintain a college of arts and sciences. A student who attends the college of arts and sciences of Cornell or the college of letters of the University of California is a member of the university and by tacit consent is allowed to call himself a "university student"; but his educational status is exactly the same as that of a student of Amherst College or Hamilton College, neither of which has any professional departments. Yet the student of the isolated college, like the two just mentioned, calls himself a "college student."

The institutions listed and described in this pamphlet are universities in the strictest sense of the term, i. e., universities maintaining professional divisions and conferring advanced degrees.

A composite view of the best American universities would show an organization of schools and divisions substantially as recorded below. Not all the divisions mentioned are represented in every one of the strongest universities. This conspectus is intended rather to show the scope of the university education than to describe conditions

\*Thus, for instance, the type of institutions known as the Technische Hochschule in Germany, or the École Polytechnique in France, is in the United States commonly a school or division of the university.

actually existing in any particular university. A few universities include in their organization other special schools or institutes devoted to preparation for particular callings, as, for instance, the School of Mines and Metallurgy of the University of Missouri, the College of Chemistry of the University of California, the Bussey Institution of Applied Biology of Harvard University, the School of Forestry of Yale University.

#### CONSPICUOUS OF UNIVERSITY ORGANIZATION.

##### College of Arts and Sciences.

Admission: Graduation from secondary school, or equivalent.

Degrees: A. B. and B. S. Four-year courses.

##### College of Engineering.

Admission: Graduation from secondary school, or equivalent.

Degrees: B. S. in Civil, Mechanical, Electrical Engineering, etc. Four-year courses.

##### College of Agriculture.

Admission: Graduation from secondary school, or equivalent.

Degree: B. S. in Agr., or some branch of agriculture. Four-year courses.

##### College of Veterinary Medicine.

Admission: Graduation from secondary school, or equivalent.

Degrees: D. V. M. or V. M. D. Four-year course.

##### College of Commerce.

Admission: Graduation from secondary school, or equivalent.

Degrees: A. B. or B. S. in Commerce. Four-year courses.

##### College of Journalism.

Admission: Graduation from secondary school, or equivalent.

Degrees: A. B., B. Litt., or B. J. Four-year course.

##### College of Pharmacy.

Admission: Graduation from secondary school, or equivalent.

Degrees: Ph. G. after two-year course. Ph. C. after three-year course.

Ph. B. after four-year course.

##### College of Dentistry.

Admission: Graduation from secondary school, or equivalent.

Degrees: D. D. S. or D. M. D. Four-year course.

##### College of Education.

Admission: Graduation from secondary school, or equivalent.

Degrees: A. B. or B. S. in Education. Four-year course.

##### School of Theology (only in connection with certain privately endowed universities).

Admission: Graduation from college of arts and sciences.

Degrees: B. D. or S. T. B. Three-year course.

##### School of Medicine.

Admission: Completion of two years of college of arts and sciences.

Degree: M. D. Four-year course.

##### School of Law.

Admission: Completion of two years of college of arts and sciences.

Degree: LL. B. Three-year course.

##### Graduate Schools.

Admission: Graduation from four-year college course.

Degrees: A. M. or M. S. One or two year course. Ph. D. or Sc. D., other degrees. Three or four year course.

## EVOLUTION OF THE UNIVERSITY.

### EQUIPMENT.

In connection with this outline of university organization it is fair to mention the astounding array of material appliances possessed by all of the principal American universities. In no other country has education been the recipient of such large and numerous benefactions from philanthropic men and women. The greatest of these have gone to American universities. Furthermore, the prosperous Commonwealths have contributed huge sums for the equipment of their State institutions. Certain of the richer universities are provided with almost everything they can possibly need to make their work effective. A description of a single great university plant would occupy too much space to be included in such a brief survey as this, but a citizen of another country who has never seen an American institution may form some idea of the magnitude of these establishments by the subjoined statements of the value of grounds and buildings of leading universities as reported to the United States Government: University of Illinois, \$5,285,053; University of Michigan, \$4,758,621; University of Wisconsin, \$7,086,799; Cornell University, \$7,739,700; University of California, \$11,400,891; University of Chicago, \$11,698,223.

### THE GRADUATE SCHOOL.

The position of the graduate school in the stronger American universities is not paralleled by the position of any division of universities of other lands. Originally planned to correspond to the faculty of philosophy of the German university and offering instruction merely in pure science and the humanities, the graduate school has far outgrown the first conception of its function. The graduate school of the large American university now usually organizes into one administrative unit<sup>a</sup> all the advanced teaching and all the facilities for original research provided by the university in any of its departments. Under this arrangement holders of the bachelor's degree who desire to specialize, for example, in agriculture, in engineering, in medical science, or in pharmacy, as well as in pure science and the humanities, enter the graduate school.

In this connection it is desirable to call attention to the fact that the degrees granted by American and foreign universities respectively are by no means equivalent. Much work that is done by

<sup>a</sup> This consolidation is not effected everywhere; for example, Columbia University maintains a faculty of philosophy, a faculty of political science, and a faculty of pure science; Harvard University has a graduate school of arts and sciences, a graduate school of business administration, a graduate school of applied biology, and a graduate school of medicine. The general description of the functions and facilities of the graduate school applies equally, however, to these and to other institutions which have not combined graduate departments into a single unit.



students in the French lycée or the German Gymnasium is included in the undergraduate curriculum of the American college or university. It is generally conceded that a student who holds a baccalaureate from a French lycée or the Abiturientenzeugnis of the German Gymnasium may be ranked with students who have finished the second year at an American college or university. Foreign students who hold degrees, therefore, from recognized European or Latin-American universities should find no difficulty in registering for advanced degrees at American universities. Those who demonstrate that they have already fulfilled a portion of the scholarly requirements for advanced degrees will be able in many instances to reduce the amount of required residence.

The American graduate school has a double aim. Chronologically, the first is to teach the properly prepared students the most advanced and specialized phases of the subjects offered by the university. More important, however, if second in point of development, is its obligation to increase the sum of human knowledge. Research is the life blood of the graduate school. The graduate school is differentiated from the ordinary professional schools by being devoted to the principle of research. As a rule, schools of medicine and engineering, for instance, aim primarily to pass on to the student a body of knowledge which is already organized and of accepted professional value, and so to train practitioners of already standardized professions. The graduate school places first emphasis upon the advancement of learning. Its teachers are expected to be actively engaged in extending the boundaries of knowledge and to direct students in the conduct of investigations. The vitality of the graduate school is properly judged by the amount and quality of its creative output.

Training for productive scholarship is still young in the United States. In view of its aims the graduate school is less susceptible to standardization than the schools already described. Its excellence will always depend in large measure on the fertility and originality of its teachers. No two schools however skillfully administered can be equal or equally strong throughout; nor, on the other hand, is a single school ever likely to have a monopoly of teaching and investigating talent in all lines. One will perhaps be pre-eminent in psychology, another in economics, another in chemistry. This variation inheres in graduate study. It has always characterized the research departments of European universities, which have had a considerably longer history.

Granting these inevitable inequalities, it is worthy of note that the great independent institutions of the East and the best-developed State universities of the West and Middle West have taken the

steps needed to secure a high general level of graduate instruction. They have invested enormous sums in library and laboratory equipment and have vied with one another in seeking as teachers the most distinguished scholars wherever they might be found. As a result of these efforts, no better material facilities for advanced study and research now exist anywhere. Certain American professors also rank with the leaders in their respective branches and have won international recognition. In fact, no other department of American higher education except the medical school has experienced so rapid and substantial a development. Most graduate schools have been established within 25 years. National appreciation of the value of research, which has made this last expansion of the university possible, is hardly 15 years old, yet the enrollment in graduate courses in the United States has increased from 4,340 in 1893 to 7,911 in 1903, and to 16,470 in 1916. A correspondingly increased volume of scientific monographs has issued from the universities.

It is therefore safe to say that students from abroad will now find in the graduate schools of the foremost American universities opportunities for special training and for research broadly equivalent to those provided by the faculties of philosophy and the scientific institutes of the universities of Europe. Such students will naturally seek those institutions which offer the best facilities and which possess the most eminent teachers in the particular lines in which they are interested.

Another function of the graduate school has been the training of teachers for higher institutions. Indeed it is now customary for appointing authorities to demand of candidates for higher teaching positions a more or less extended period of graduate study. Nevertheless there has been as yet no general adaptation of graduate courses to the professional needs of the prospective teacher. American graduate schools, like the universities of Europe, have in this matter proceeded on the assumption that the most important thing for the teacher of mature pupils is to know his subject. The method of its presentation may then safely be left to his individual judgment.

The typical American graduate school admits as students only those who hold a bachelor's degree from a college or university of recognized standing. It confers two orders of degree, the master's degrees<sup>10</sup> and the doctor's degrees.<sup>11</sup>

To secure a master's degree one year of postgraduate study, devoted as a rule to not more than three subjects, one of which, called the major subject, receives the bulk of the student's attention, is

<sup>10</sup> A. M., M. Com. Sci., M. F., M. L., M. Ped., M. S., M. S. in Agr., Cer. Eng., Chem. Eng., C. E., E. E., E. Min., Mech. E., Met. E.

<sup>11</sup> Ph. D., Sc. D., D. Eng., Phar. D.



usually required.<sup>12</sup> Most universities also demand a thesis embodying the results of a small piece of research.

The minimum period of postgraduate study for a doctor's degree is usually three years. The time spent and the number of courses taken, however, are of secondary importance. As in the case of the master's degree a student pursues not more than three subjects, the major subject requiring the greater part of his time and attention. To receive the degree it is necessary that the candidate not only demonstrate in examination his mastery of his special field but also by means of a dissertation or thesis make an original contribution to knowledge in that field. Most universities require the dissertation to be published. Limited facilities for this purpose are possessed by nearly all the universities whose offerings are listed later in this pamphlet. The examinations are both written and oral. In fact, the requirements for the American degree of doctor of philosophy parallel closely those proposed by the German universities for the same degree. But American universities have recently attempted to demand of candidates for the degree a somewhat longer scholarly preparation and a more substantial thesis.

#### FELLOWSHIPS AND SCHOLARSHIPS.

For the encouragement of research work each university usually awards a number of fellowships and scholarships to graduate and professional students who show exceptional ability and promise. The stipend connected with these fellowships and scholarships ordinarily varies from \$100 to \$600 in the several institutions. The holders of these fellowships are sometimes required to teach from one to six hours a week in undergraduate classes.<sup>13</sup> Foreign students will usually find it necessary and desirable to spend at least a year in residence at an American university before their applications for scholarships and fellowships will be considered favorably.

#### SOCIAL LIFE.

Although the social life chiefly in evidence at American universities is primarily of interest to undergraduate students, social opportunities for graduate students are by no means neglected. Foreign students will naturally find the cosmopolitan clubs existing at many universities of great assistance in adjusting themselves to American conditions. These clubs are composed of both foreign and American students, who are thus afforded excellent opportunities to become

<sup>12</sup> Two years of postgraduate study are ordinarily required for the master's degrees at Yale and Johns Hopkins Universities.

<sup>13</sup> For example, the Austin teaching fellowships at Harvard University, holders of which receive \$500 and are expected to devote about half of their time to teaching; also the Harrison senior fellowships at the University of Pennsylvania, holders of which receive \$800 and are expected to offer a single course of lectures.

acquainted and to exchange ideas. Entertainments and lectures are held at intervals throughout the university year. A reading room containing newspapers and magazines is usually maintained at the expense of the club, and in some instances there are also facilities for board and room. At nearly all universities also the graduate students maintain an organization called the "Graduate Club." The purposes of this organization are primarily social, and opportunity is thus afforded for graduate students to meet others who are interested in the various lines of research represented at the university.

#### TRAVEL

Not the least advantage to a foreign student pursuing his university work here will be the opportunity to observe the people and the customs of an alien nation. He should therefore strive to extend his observations as widely as possible. Railroad travel costs on the average 3.6 cents a mile; a seat in an individual chair car, called a "Pullman" car, costs approximately one-half a cent a mile extra. A berth in a sleeping car costs about  $\frac{1}{4}$  of a cent a mile extra. Good hotel accommodations may be had—depending upon the place—from \$3.50 a day, including meals, up. For a longer sojourn in city communities, good board and room may be secured at rates ranging from \$10 a week up. In the country one may occasionally find satisfactory board and lodging for less.

In order that prospective students may gain a more adequate idea of the expense of traveling in the United States, the following table of distances between important cities is included:

*Distance (in miles) from—*

	New York.	San Francisco.	New Orleans.
New York.....			
Chicago.....	960	3,183	1,344
Philadelphia.....	90	2,280	930
St. Louis.....	1,127	3,098	1,254
Boston.....	232	2,294	717
Baltimore.....	185	3,312	1,576
San Francisco.....	3,183	3,076	1,158
New Orleans.....	1,344	2,477	2,477
Washington, D. C.....	225	3,116	1,118

#### THE ASSOCIATION OF AMERICAN UNIVERSITIES.

The development of ideals of graduate instruction and the determination of minimum standards, as far as these may be practically applied, have resulted during the last 18 years from the work of the Association of American Universities. Mention was made on

an earlier page of the tendency of educational interests in the United States to form voluntary associations for the purpose of defining standards and bringing about the mutual advancement of the members. The Association of American Universities was formed in 1900 by a group of 14 institutions, which then had well-developed graduate schools. Since that time the membership of the association has been increased to 24. The stated qualification for membership is that an institution must be engaged in giving advanced or graduate instruction. In practice the association has admitted to its ranks only those institutions giving graduate work of recognized quality leading to the highest graduate degrees. While, therefore, there are several other reputable institutions in the United States outside of the membership of the association which offer graduate instruction, it is assumed that the foreign student, desiring to pursue some line of advanced study, would naturally be especially interested in the offerings of the members of this body. In the following pages there is presented a summary of the conditions of graduate work at each of these institutions. A few of the stronger graduate schools outside the membership of the association are also included in the summary. While this summary attempts to indicate the branches of learning for the pursuit of which each of these universities offers especial advantages, it is not intended to be a complete account of the university's offerings. Foreign students are urged to correspond with the registrars of the institution or institutions they may choose to attend, for full information.

## HIGHER DEGREES.

A. E. or Agr. E.	Agricultural Engineer.
A. M. or M. A.	Master of Arts.
Arch.	Architect.
Arch. Eng.	Architectural Engineer.
B. D. or D. B.	Bachelor of Divinity.
Cr. E.	Ceramics Engineer.
Ch. E. or Chem. E.	Chemical Engineer.
C. E.	Civil Engineer.
C. P. H.	Certificate in Public Health.
D. C. L.	Doctor of Civil Law.
D. Sc., Sc. D., or S. D.	Doctor of Science.
D. Sc. in Hygiene.	Doctor of Science in Hygiene.
D. P. H. or Dr. P. H.	Doctor of Public Health.
D. Sc. in Phm.	Doctor of Science in Pharmacy.
Ed. D.	Doctor of Education.
Ed. M.	Master of Education.
E. E. or Elec. E.	Electrical Engineer.
E. M.	Engineer of Mines.
El. Met.	Electrometallurgist.
Graduate in Architecture.	

## Graduate in Education.

## Graduate in Public Health.

J. C. D.	Doctor in Canon Law.
J. C. L.	Licentiate in Canon Law.
J. D. or Jur. D.	Doctor of Law.
J. S. D.	Doctor of Science in Law.
M. M.	Master of Laws.
Mar. E.	Marine Engineer.
M. Arch.	Master of Architecture.
M. A. in Education.	
M. A. in Municipal Administration.	
M. B. A.	Master in Business Administration.
M. C. E.	Master of Civil Engineering.
M. C. L.	Master of Civil Law.
M. C. S.	Master of Commercial Science.
M. D.	Doctor of Medicine.
M. E. or Mech. E.	Mechanical Engineer.
M. E. E.	Master of Electrical Engineering.
Met. E.	Metallurgical Engineer.
M. F.	Master of Forestry.
M. L.	Master of Literature.
M. L. A.	Master of Landscape Architecture.
M. L. D.	Master of Landscape Design.
M. M. E.	Master of Mechanical Engineering.
M. Ped.	Master of Pedagogy.
M. S. A.	Master of Scientific Agriculture.
M. S. or S. M.	Master of Science.
M. S. F.	Master of Scientific Forestry.
M. S. in Agr.	Master of Science in Agriculture.
M. S. in Arch.	Master of Science in Architecture.
M. S. or S. M. in Civil Engineering.	
M. S. or S. M. in Electrical Engineering.	
M. S. in Education.	
M. S. in Mechanical Engineering.	
M. S. or M. Sc. in Engineering.	
M. S. in For.	Master of Science in Forestry.
M. S. in Min. E.	Master of Science in Mining Engineering.
M. S. in Municipal Administration.	
M. S. in Phm.	Master of Science in Pharmacy.
M. S. or M. Sc. in Public Health.	
M. S. T. or S. T. M.	Master of Sacred Theology.
Nav. Arch.	Naval Architect.
Pd. D.	Doctor of Pedagogy.
Pd. M.	Master of Pedagogy.
Ph. D.	Doctor of Philosophy.
Ph. C.	Pharmaceutical Chemist.
Phar. D.	Doctor of Pharmacy.
S. M. in Sanitary Engineering.	
S. J. D.	Doctor of Science in Law.
S. T. B.	Bachelor of Sacred Theology.
S. T. D.	Doctor of Sacred Theology.
Th. D.	Doctor of Theology.

## OFFERINGS OF GRADUATE WORK AT UNIVERSITIES AND COLLEGES:

In the following pages there is presented a summary of the offerings of graduate work at each of these institutions. A few of the stronger graduate schools outside the membership of the association are also included in the summary. As one means of indicating the strength of graduate work at the respective institutions the number of M. A., M. S., and Ph. D. degrees conferred in each subject during the three years 1916-1918, inclusive, have been included with the summary for each institution. It has not been feasible to include the other higher degrees.

**UNIVERSITY OF CALIFORNIA, Berkeley, Calif.,** a city of 56,036 inhabitants, 35 minutes by train from San Francisco. Founded, 1868; a "land-grant" institution; coeducational.

Admission: Bachelor's degree from a recognized college.

Degrees:

M. A., M. S.—One year of postgraduate study; thesis.

Ph. D.—At least two years of postgraduate study; thesis.

J. D.—Two years of postgraduate study; thesis.

Graduate in Architecture.—Two years of postgraduate study; thesis.

Graduate in Public Health.—Two years of postgraduate study.

Graduate in Education.—Two years of postgraduate study.

M. E., E. E., E. M., Metallurgical E.—These degrees are conferred upon graduates of engineering colleges who, at least three years after receiving the bachelor's degree, one of which must have been spent in professional work, successfully pass an examination in prescribed subjects and present a thesis.

C. E.—At least three years of postgraduate study and thesis.

The engineering degrees will also be conferred upon those holding bachelor's degrees from the University of California who, at least 10 years after graduation, in addition to evidence of exceptionally successful professional work, present a satisfactory thesis.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Laboratories in chemistry; museum of vertebrate zoology; anthropological museum; Lick Astronomical Observatory; Scripps Institution for Biological Research; and the Graduate School of Tropical Agriculture.

B. Library facilities: 403,000 volumes. In addition thereto is the valuable and extensive Bancroft Library of Pacific Coast History.

Noteworthy facilities for particular lines of graduate study—Continued.

C. Facilities for the publication of research results: The University of California Press—(a) Serial publications in agricultural sciences, American archaeology and ethnology, astronomy, botany, classical philology, economics, education, Egyptian archaeology, engineering, entomology, geography, geology, Graeco-Roman archaeology, history, mathematics, modern philology, pathology, philosophy, political science, psychology, seismography, Semitic philology, and zoology; (b) Publications of the Lick Observatory; (c) University of California Prize Essays; (d) bulletins of the Agricultural Experiment Station.

Number of M. A., M. S., and Ph. D. degrees granted during the years 1916-1918, listed according to the major subject pursued:

M. A.	M. A.—Continued.	M. S.—Continued.
History..... 42	Research medi-..... 2	Mechanics..... 1
English..... 44	cine..... 1	Mining..... 1
Anthropology..... 3	Sociology..... 1	Total..... 61
Economics..... 16	Epigraphy..... 1	Ph. D.:
Pathology..... 3	Oriental languages..... 1	Botany..... 4
Philosophy..... 3	Entomology..... 2	Chemistry..... 8
Graphic art..... 6	Domestic art..... 1	Plant pathology..... 2
Chemistry..... 11	Total..... 325	Economics..... 1
Mathematics..... 21	M. S.:	History..... 9
Latin..... 14	Citriculture..... 6	Physics..... 3
Education..... 31	Chemistry..... 9	French..... 1
Botany..... 17	Agronomy..... 4	Astronomy..... 4
Spanish..... 7	Agricultural edu-..... 5	Soil chemistry..... 3
Biochemistry..... 2	cation..... 7	Zoology..... 6
German..... 16	Plant pathology..... 5	Paleontology..... 3
Household science..... 1	Electrical engi-..... 5	Mathematics..... 4
Anatomy..... 1	neering..... 1	Spanish..... 1
Architecture..... 9	Mechanical engi-..... 3	Physiology..... 2
French..... 11	neering..... 3	Geology..... 3
Zoology..... 15	Physics..... 1	Philosophy..... 2
Paleontology..... 2	Viticulture..... 2	Political science..... 2
Mineralogy..... 1	Soils..... 1	Inorganic chemis-..... 1
Drawing..... 2	Irrigation..... 2	try..... 1
Slavic..... 1	Economics..... 3	Pomology..... 1
Semitics..... 1	Civil engineering..... 1	Biochemistry..... 1
Psychology..... 6	Rural institutions..... 2	Education..... 1
Geology..... 2	Geology..... 1	Classical archaeol-..... 1
Physiology..... 6	Pomology..... 3	ogy..... 1
Nutrition..... 4	Agricultural..... 1	Physical chemis-..... 3
Political science..... 7	chemistry..... 2	Total..... 66
Physics..... 4	Entomology..... 2	
Astronomy..... 1		
Hygiene..... 2		
Public health..... 4		
Pathology and bacteriology..... 1		

#### Expenses:

Tuition (free for residents of State) for nonresidents of State.....	\$20
Board and lodging, per month.....	30-45
Total annual expense need not exceed.....	500

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C., a city of 437,571 inhabitants, the capital of the country. Founded 1887.

School of Philosophy—Graduate Department:

Admission: Bachelor's degree from a recognized college.

Degrees:

Ph. M.—Two years of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.



**School of Letters—Graduate Department:**

Admission: Bachelor's degree from a recognized college.

## Degrees:

A. M.—One year of postgraduate study; thesis.

L. H. M.—Two years of postgraduate study; thesis.

Ph. D. Three years of postgraduate study; thesis.

L. H. D.—As for Ph. D.

**School of Sciences—Graduate Department:**

Admission: Bachelor's degree from a recognized college.

## Degrees:

A. M.—One year of postgraduate study; thesis.

M. S., E. E., C. E., M. E.—Two years of postgraduate study; thesis.

Sc. D., Ph. D.—Three years of postgraduate study; thesis.

**School of Sacred Sciences—Graduate courses:**

## Degrees:

S. T. L. or J. C. L.—Two years of postgraduate study; thesis.

S. T. D. or J. C. D.—Four years of postgraduate study; thesis.

**School of Law—Graduate Department:**

Admission: Bachelor's degree from a recognized college and LL. B. from the University, Law School or from some law school of recognized standing.

## Degrees:

LL. M., M. C. L.—One year of postgraduate study; thesis.

J. D.—Two years of postgraduate study after LL. M.; thesis.

D. C. L.—Two years of postgraduate study after M. C. L.; thesis.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and research funds: Chemical laboratories. Special funds for research in alcohol and alcoholism.

B. Library facilities: 120,000 volumes. Special collections relating to the Bible, Orientalia, sociology, Marylandiana, Shakespeare, Dante. The Library of Congress and other large libraries located in Washington are also easily available for use.

C. Facilities for the publication of research results: The Corpus Scriptorum Christianorum Orientalium; The Catholic Historical Review; The Catholic Charities Review.

Number of M. A. and Ph. D. degrees granted during the three years, 1916-1918, listed according to the major subject pursued:

M. A.:	M. A.—Continued.	Ph. D.—Continued.
Philosophy..... 7	Physics..... 3	History..... 1
Psychology..... 12	Chemistry..... 2	Political science.. 1
Education..... 20	Biology..... 2	Economics..... 1
History..... 37	Architecture..... 1	English..... 4
Political science.. 6		Latin..... 5
Economics..... 10	Total..... 127	Greek..... 2
English..... 8		Syriac..... 1
Latin..... 8	Ph. D.:	Mathematics..... 2
Greek..... 2	Philosophy..... 3	Chemistry..... 2
French..... 1	Psychology..... 2	
German..... 1	Education..... 4	Total..... 28
Mathematics..... 7		

**Expenses:**

Tuition.....	\$150.00
Diploma fee, master's degree.....	15.00
Diploma fee, doctor's degree.....	25.00
Board (at university) per month.....	30.00
Room (at university) per month.....	8.50-20.00
<b>Total annual expense, \$500 and upward.</b>	



## OFFERINGS OF GRADUATE WORK.

2

**CLARK UNIVERSITY, Worcester, Mass.,** a city of 179,754 inhabitants. Founded, 1887; educational; offers instruction in eight graduate departments only.

Admission: Bachelor's degree from a recognized college, or the equivalent.  
Degrees:

A. M.—At least one year of postgraduate study; thesis.

Ph. D.—At least one year, but in most cases three years, of postgraduate study; thesis.

The university is strictly a graduate school. It is devoted primarily to research, secondarily to the training of investigators and teachers. For both these ends it emphasizes the importance of close personal relations between professors and students. Its small student body and large teaching staff have enabled it to foster these relations.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Pedagogical museum; facilities for research in genetic psychology. Special funds exist for research in physics and chemistry. Especially noteworthy, both on account of the eminence of the instructors and the comprehensiveness of the courses is the work in education, under which head is included instruction in psychology and pedagogy. The university is one of the few in the country to possess an excellently well-equipped pedagogical museum. A children's institute provides special facilities for various branches of child study.

B. Library facilities: Seventy-five thousand volumes. The public library of Worcester, containing 200,000 volumes, is available for the use of students.

C. Facilities for the publication of research results: The following journals are connected unofficially with the various departments of the university: (1) The American Journal of Psychology, (2) The Pedagogical Seminary, (3) The Journal of Race Development, (4) The Journal of Applied Psychology.

Number of A. M. and Ph. D. degrees granted during the three years, 1916-1918, listed according to the major subject pursued:

A. M.		A. M.—Continued.		Ph. D.—Continued.	
Mathematics.....	2	Pedagogy.....	13	Psychology.....	17
Chemistry.....	10			Pedagogy.....	4
Biology.....	3	Total.....	75	Sociology.....	4
Psychology.....	20			History.....	3
Sociology.....	7	Ph. D.:		Physics.....	2
History.....	16	Mathematics.....	2		
Physics.....	4	Chemistry.....	3	Total.....	35

Expenses: Tuition, \$100; total annual expense \$300 and upward.

**UNIVERSITY OF CHICAGO, Chicago, Ill.,** a city of 2,701,705 inhabitants, and one of the great railway centers of the country. Incorporated, 1890; coeducational.

The Graduate Schools (Graduate School of Arts and Literature; Ogden Graduate School of Science):

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M. and M. S.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis. The doctor's degree is given "not on the basis of the completion of a certain amount of time spent on a specified program, but as the recognition and mark of high attainments and ability in the candidate's chosen province."

**School of Education—Graduate Department:**

Admission: Bachelor's degree from a recognized college.

Degrees: A. M., M. S., Ph. D., conferred by the Graduate Schools of Arts, Literature, and Science.

**College of Commerce and Administration—Graduate Departments:**

Admission: Bachelor's degree from a recognized college.

Degrees: A. M. and Ph. D.—Conferred under the same conditions as in the Graduate Schools.

**Graduate Divinity School:**

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate work; thesis.

D. B.—Three years of postgraduate work; thesis.

Ph. D.—Four years of postgraduate work; thesis.

**Law School—Graduate course:**

Admission to J. D. course: Three years of collegiate work. Before receiving the J. D., students must receive a bachelor's degree from the College of the University of Chicago or from an equivalent college. The first year in the Law School may be counted toward this, and the bachelor's degree be awarded at its completion.

Degree: J. D.—Two or more years of postgraduate work, dependent upon whether the undergraduate work has included one year of law.

Courses offered in the Graduate Schools are of the highest rank. Opportunities for specialization are offered in the following departments: Philosophy, psychology, education, political economy, political science, history, history of art, sociology and anthropology, household administration, comparative religion, Semitic languages and literatures, Biblical and patristic Greek, Sanskrit and Indo-European comparative philology, Greek, Latin, romance, Germanic, English language and literature, general literature, mathematics, astronomy and astrophysics, physics, chemistry, geology, geography, zoology, anatomy, physiology, paleontology, botany, pathology, hygiene, and bacteriology.

Note-worthy facilities for particular lines of graduate study:

A. Equipment and research funds: Excellent facilities for graduate research work in laboratories for physics, chemistry, geology, botany, bacteriology, anatomy, physiology, and zoology. The Walker Museum contains mineralogical, anthropological, paleontological, and geological collections. The Haskell Oriental Museum contains collections relating to Egypt, Babylonia, Assyria, comparative religion, and Biblical antiquities. There are also opportunities for advanced work in astronomy at the Yerkes Astronomical Observatory.

B. Library facilities: 545,890 volumes. The library has strong collections in Government publications; publications of learned societies; American history, particularly of the Central West and Southern States; American and English literature; Celtic; Germanic literature from 1750 to 1870; Russian history and literature; and sociology. Other large libraries located in Chicago, including the Newberry Library, 370,831 volumes, John Crerar libraries, 380,670 volumes, and the Chicago Public Library, 806,172 volumes, are easily accessible to graduate students.

C. Facilities for the publication of research results: Chicago University Press, which publishes the *Biblical World*, the *Botanical Gazette*, the *Astrophysical Gazette*, the *Journal of Geology*, the *American Journal of Sociology*, the *Journal of Political Economy*, the *American Journal of Theology*, the *American Journal of Semitic Languages and Literatures*, *Classical Philology*, the *Classical Journal*, *Modern Philology*, and the *English Journal*.

# OFFERINGS OF GRADUATE WORK.

25

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.:	M. S.—Continued.	Ph. D.—Continued.
Philosophy..... 9	Geology..... 1	Oriental languages and literatures.. 2
Psychology..... 6	Geology and paleontology..... 2	Latin..... 11
Education..... 87	Geography..... 7	Romance..... 9
Political economy 5	Zoology..... 6	German..... 11
Political science.. 4	Anatomy..... 1	English..... 16
Commerce and administration.... 6	Physiology..... 30	Semitics..... 2
History..... 54	Botany..... 32	Mathematics..... 41
History of art.... 1	Pathology..... 3	Astronomy..... 21
Sociology and anthropology..... 12	Hygiene and bacteriology..... 2	Physics..... 38
Greek..... 4	Total..... 155	Chemistry..... 36
Household administration..... 4		Geology..... 3
Latin..... 24	Ph. D.:	Geology and paleontology..... 15
Romance..... 14	Philosophy..... 13	Geography..... 3
English..... 44	Psychology..... 28	Zoology..... 10
General literature. 6	Education..... 20	Anatomy..... 10
German..... 24	Political economy 7	Physiology..... 19
Total..... 304	Political science.. 7	Paleontology.... 2
	History..... 15	Botany..... 57
M. S.:	History of art.... 1	Physiological chemistry..... 6
Mathematics..... 25	Sociology and anthropology..... 10	Pathology..... 7
Astronomy..... 6	Greek..... 10	Hygiene and bacteriology..... 7
Physics..... 10	Sanskrit..... 2	Total..... 439
Chemistry..... 30		

## Expenses:

Matriculation.....	\$5
Tuition, all graduate schools.....	120
School of Law.....	150
Diploma fee, M. A., M. S., etc.....	10
Diploma fee, Ph. D. (with hood).....	15
Room (university dormitory).....	60-225
Board (university commons).....	135-225
Total annual expense.....	340-715

COLUMBIA UNIVERSITY, New York, N. Y., a city of 5,620,048 inhabitants. Founded, 1754.

## Graduate faculties:

The Faculties of Political Science, Philosophy and Pure Science offer courses of advance nonprofessional instruction and opportunities for specialized study and original research in the following departments: Anatomy, anthropology, astronomy, bacteriology, biological chemistry, botany, chemical engineering, chemistry, civil engineering, economics, electrical engineering, educational research, English and comparative literature, geology, Germanic languages, Greek and Latin, history, Indo-Iranian, mathematics, mechanical engineering, metallurgy, mineralogy, mining, music, pathology, philosophy, physiology, psychology, physics, public law, Romance languages, Semitic languages, Slavonic languages, social science, zoology.

Admission: Bachelor's degree from a recognized college or its equivalent.

Degrees:

A. M.—Minimum of one year of graduate study, and essay.

Ph. D.—Minimum of two years of graduate study (one of which must be at Columbia University), and dissertation.

Schools of Mines, Engineering, and Chemistry:

Admission: Three years' work in an approved college or scientific school.

Degrees: E. M., Met. E., C. E., E. E., Mech. E., Chem. E. —Three years' study.

College of Pharmacy—Graduate course:

Admission: Ph. C. degree.

Degrees:

B. S. in Pharmacy.—One year of postgraduate study.

Phar. D.—Three years of postgraduate study.

School of Journalism—Graduate course:

Admission: B. Lit. degree.

Degree: M. S.—One year after B. Lit.

School of Law:

Admission: Three years' collegiate work.

Degrees:

LL. B.—Three-year course.

LL. M.—One year of study after LL. B.

School of Business—Graduate course:

Admission: B. S. degree.

Degree: M. S.—One year after B. S.

Teachers' College:

School of Practical Arts.—Graduate course:

Admission: B. S. degree in education or in practical arts.

Degree: M. S.—One year of postgraduate work.

School of Education:

Admission: Bachelor's degree from a recognized college.

Degree: A. M.—One year of study.

The School of Education of Teachers College offers to advanced students extensive courses in the history and philosophy of education, educational psychology and sociology, theory and practice of educational administration, supervision, and class teaching.

The location of Columbia, in America's most populous city, the liberal endowment, the large number of valuable scholarships, and especially the high standing of the university in all departments have combined to draw to it in the past a great many foreign students.

The following departments are among those especially noteworthy, either because of the eminence of the men connected with them or because of the wide range of the courses offered: Mathematics, physics, biology, botany, geology, chemistry, Oriental and Semitic languages, Germanic languages and literature, English, history, economics and politics, anthropology, philosophy, and psychology.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Special chemical laboratories, including research for cancer. The facilities of various hospitals, the American Museum of Natural History, and the New York Botanical Garden are also at the disposal of students. Close informal relations are maintained with the Rockefeller Institute of Medical Research, the new Zoological Garden, the New York Aquarium, and the New York School of Social Work.

Noteworthy facilities for particular lines of graduate study—Continued.

B. Library facilities: 712,000 volumes. Noteworthy special collections relating to Columbiana, architecture and decorative art, Mary Queen of Scots, Goethe, Kant, Grotius, philology, mathematics, astronomy, and music. Many other large libraries located in New York City (including the New York Public Library, 1,065,496 vols.) are also open to the use of graduate students.

C. Facilities for the publication of research results: (1) The Columbia University Press: Columbia University Germanic studies, Indo-Iranian series, Oriental studies, studies in classical philology, studies in English and comparative literature, studies in history, economics, and public law, studies in Romance philology and literature, contributions to anthropology, contributions to Oriental history and philology. (2) Columbia University Contributions to Education (philosophy, psychology, and education).

Number of M. A., M. S., and Ph. D. degrees granted during the three years, 1916-1918, listed according to the major work pursued:

M. A.:	M. A.—Continued.	M. S.—Continued.
Agriculture..... 2	Politics..... 32	Business..... 11
Administrative	Psychology..... 33	Chemical engi-
Law..... 1	Romance lan-	neering..... 1
Anthropology..... 2	guages..... 39	Education..... 2
Astronomy..... 2	Semitic lan-	Total..... 70
Bacteriology..... 12	guages..... 4	
Biological chem-	Slavonic lan-	Ph. D.:
istry..... 15	guages..... 4	Agriculture..... 1
Botany..... 43	Social economy..... 48	Astronomy..... 1
Chemistry..... 78	Sociology and	Anthropology..... 1
Comparative lit-	statistics..... 62	Bacteriology..... 4
erature..... 42	Zoology..... 22	Biological chem-
Constitutional	Classical phil-	istry..... 11
law..... 14	ology..... 5	Botany..... 4
Education..... 51	English and com-	Chemistry..... 23
English..... 113	parative litera-	Comparative lit-
Geography..... 1	ture..... 46	erature..... 1
Geology..... 12	Metallurgy..... 4	Constitutional
Germanic lan-	Pathology..... 2	law..... 2
guages..... 54	Phonetics..... 1	Chemical engi-
Highway engi-	Public law..... 6	neering..... 3
neering..... 1	Music..... 1	Classical phil-
History..... 154	Neurology..... 2	ology..... 3
Indo-Iranian..... 6	Greek..... 2	Education..... 39
International law..... 9	Total..... 1,077	English..... 6
Latin..... 33		English and com-
Mathematics..... 42	M. S.:	parative litera-
Mathematical	Electrical engi-	ture..... 5
physics..... 2	neering..... 15	Geology..... 6
Mechanical en-	Highway engi-	Geography..... 1
gineering..... 1	neering..... 10	Germanic lan-
Philosophy..... 47	Mechanical en-	guages..... 4
Physics..... 9	gineering..... 22	Greek..... 1
Physiology..... 6	Metallurgy..... 7	History..... 26
Political economy..... 67	Architecture..... 2	International law..... 3



Ph. D.—Continued.	Ph. D.—Continued.	Ph. D.—Continued.
Jurisprudence... 1	Political econ- omy..... 20	Semitic lan- guages..... 6
Latin..... 2	Physiology..... 1	Social economy... 3
Mathematics... 8	Psychology..... 12	Sociology and sta- tistics..... 7
Mathematical physics..... 1	Politics..... 4	Zoology..... 9
Metallurgy..... 1	Public law..... 2	Total..... 252
Pathology..... 1	Romance lan- guages..... 15	
Philosophy..... 10		
Physics..... 4		

## Expenses:

University fee, per session.....	\$5
Tuition, based on amount of work taken, average.....	200-250
Diploma fee, master's degree.....	25
Diploma fee, doctor's degree.....	35
Board, university commons.....	160-225
Room, university dormitory.....	90-100
Total annual expense, estimated.....	545-685

**CORNELL UNIVERSITY**, Ithaca, N. Y., a city of 17,001 inhabitants. Founded, 1865; a "land-grant" institution; coeducational.

Admission: Bachelor's degree from a recognized college.

## Degrees:

A. M., M. Arch., M. C. E., M. M. E., M. F., M. S., M. S. in Agr., Master in Land-  
scape Design.—One year postgraduate study; thesis.

Ph. D.—Three years' graduate study; thesis.

The Graduate School has exclusive control of graduate work in all divisions of the university. It offers opportunities for advanced study and research in most of the important fields of knowledge, under the direct guidance of members of the faculty and unhampered by formal restrictions.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Facilities in psychology and philosophy, history, chemistry, entomology, botany, soil technology, and practical agriculture. Special funds for research in agriculture, engineering, philosophy and psychology, physics, and medicine.

B. Library facilities: Number of volumes in the university library and special libraries, 460,000. Special collections relating to Egyptology and Assyriology, classical languages and literatures, oriental languages and literatures, Anglo-Saxon, English history, American history, American slavery and antislavery, folklore, Russian history and literature, the Reformation, the English and French Revolutions, the American Civil War, history of superstition, Goethe, Cowper, Spinoza, Dante, Petrarch, Italo-Romance, Ireland, German philology and literature, South America, 16th and 17th Century French and Italian society, veterinary science, architecture, and mathematics.

C. Facilities for the publication of research results: Physical Chemical Journal; Sibley Journal; The American Journal of Psychology; The Philosophical Review; Cornell University studies in classical philology, English, philosophy, history, and economics.

Number of M. A., M. S., and Ph. D. degrees granted during the three years, 1916-1918, listed according to the major work pursued:

# OFFERINGS OF GRADUATE WORK.

2

M. A.:		M. A.—Continued.		Ph. D.—Continued.	
English.....	11	Modern European		Medieval history..	
German.....	10	history.....	1	Inorganic chemis-	
Philosophy.....	5	Analytical chem-		try.....	
Latin.....	6	istry.....	1	Farm crops.....	
Botany.....	8	Physical geog-		Histology and em-	
Comparative mor-		raphy.....	1	bryology.....	
phology.....	1	Limnology.....	1	Botany.....	
Insect morphology	1	Total.....	89	Biological chemis-	
and histology...	1			try.....	
Veterinary sur-		M. S.:		Biology.....	
gery.....	1	Wood technology.	1	Entomology.....	
Bacteriology.....	1	Dairy bacteriology	1	English history...	
Zoology.....	2	Economic ento-		Experimental	
Economic geology	2	mology.....	1	physics.....	
Comparative pa-		Foods and nutri-		Politics.....	
thology.....	1	tion.....	1	Economic theory.	
Paleontology and		Veterinary bacte-		Rural engineering.	
stratified geol-		riology.....	1	Electrophysics...	
ogy.....	1	Total.....	5	Mathematical	
Biology.....	1			analysis.....	1
Education.....	1	M. S. in Agr.....	46	Insect morphology	2
French.....	3			Bridge engineer-	
Psychology.....	1	Ph. D.:		ing.....	1
American history.	3	Hog cholera.....	1	Sanitary engineer-	
Experimental		Latin.....	3	ing.....	1
physics.....	2	Philosophy.....	4	Bacteriology.....	1
Chemical micro-		Plant physiology.	1	Poultry breeding.	1
scopy.....	1	Geometry.....	3	Pomology.....	1
Pure mathematics	2	Insect ecology...	1	Mycology.....	1
Plant pathology...	1	Physiology.....	3	Rural education	
Illumination.....	1	Psychology.....	5	and economics.	1
Histology.....	1	Physical chemis-		Pathology.....	1
Anatomy.....	1	try.....	4	Spanish.....	1
Finance and ac-		Economic ento-		Plant breeding...	3
counting.....	1	mology.....	2	Dairy industry...	1
Entomology.....	7	Experimental		Poultry husbandry	1
Plant breeding	2	physiology.....	1	Farm management	2
Spanish.....	1	Finance.....	2	Soil technology...	4
Geometry.....	1	Economics.....	1	Paleontology and	
Mathematical		Plant pathology...	7	stratigraphy.....	1
analysis.....	1	Limnology.....	1	Total.....	104
Mathematics.....	2	Organic chemistry	5		
American litera-		Pure mathematics	1		
ture.....	1	American history.	3		

## Expenses:

Matriculation fee.....	\$5
Tuition.....	150
Board and room, per week.....	9-12
Diploma fee.....	20



**HARVARD UNIVERSITY**, Cambridge, Mass., a city of 109,694 inhabitants, adjoining Boston, 768,758 inhabitants. Founded in 1636, it is the oldest American university.

Graduate School of Arts and Sciences (advanced instruction in the arts and pure science):

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—At least one year of approved postgraduate study, completed with distinction.

Ph. D.—At least two years of advanced study; a thesis; examinations. "The requirements of time for the degree of doctor of philosophy are wholly secondary."

Graduate courses in Engineering School:

Admission: The possession of the bachelor of science degree.

Degrees:

S. M. (in Mechanical Engineering, in Electrical Engineering, in Civil Engineering, in Sanitary Engineering, in Industrial Chemistry; also Mining Engineer, and Metallurgical Engineer).—One year of postgraduate technical study beyond the requirement for the degree of bachelor of science.

S. D.—Requirements same as for Ph. D.

Graduate School of Business Administration (scientific instruction in principles of business organization and administration and in specialized branches of modern business):

Admission: Bachelor's degree from a recognized college.

Degree: M. B. A.—Two years of postgraduate study; thesis.

Divinity School:

Admission: A. B. or equivalent.

Degrees:

S. T. B.—Three-year course.

S. T. M.—One year of advanced study after taking S. T. B.

Th. D.—Not less than two years of advanced study; thesis; examination.

Law School:

Admission: Bachelor's degree from recognized college.

Degrees:

J.L. B.—Three-year course.

S.S. D.—One year of advanced study after taking J.L. B.

Graduate course in Medical School:

Admission: Possession of M. D. degree.

Degree: D. P. H.—One year's study after taking M. D.

Graduate School of Medicine:

Admission: M. D.

Graduate Schools of Architecture and Landscape Architecture:

Admission: Bachelor's degree from recognized college.

Degrees: M. Arch. and M. L. A.

Graduate School of Applied Biology (Bussey Institution of Applied Biology):

Admission: Bachelor's degree from recognized college.

Degrees:

S. M. and M. F.—Two years' course.

S. D.—Requirements same as for Ph. D.

**Graduate School of Education:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

Ed. M.—At least one academic year of graduate study; thesis.

Ed. D.—Not less than two years of graduate study, at least one of which must be spent in continuous residence at the university; thesis; examinations.

Radcliffe College (affiliated with Harvard University; admits women only):

**Graduate Department:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

A. M.—Requirements same as in Harvard College.

Ph. D.—Requirements same as in Harvard College.

The schools of engineering, architecture and landscape architecture, and forestry are strictly graduate schools, and therefore demand a more extended general and special training than is usually required to secure degrees in these departments.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Medical laboratories; Museum of Comparative Zoology; Gray Herbarium; Arnold Arboretum; Bussey Institution (applied biology); Jefferson Physical Laboratory; Wolcott Gibbs Memorial Laboratory (physical chemistry); Croft Laboratory (high tension); Peabody Museum of American Archaeology and Ethnology; astronomical observatory; Blue Hill Observatory (meteorology); William Hayes Fogg Art Museum; Germanic Museum. There are also opportunities for research in the Harvard Bureau of Municipal Research and in the Bureau of Economic Research.

The Graduate School of Arts and Sciences is one of the best equipped graduate schools in the country. The following departments are especially noteworthy by reason of the outstanding eminence of the professors connected with them, or because of exceptional material equipment: Astronomy, biology, botany, chemistry, comparative literature, economics and sociology (called social ethics), education, English language and literature, Germanic languages and literatures, history and government, philosophy and psychology, Romance languages and literatures.

B. Library facilities: Total number of volumes in the university library, including the special and departmental libraries, 1,243,161. There are also a number of other large libraries in Boston and Cambridge, including the Boston Public Library (1,157,326 volumes), whose facilities are open to graduate students.

C. Facilities for the publication of research results: The Harvard University Press, which publishes economic studies; historical studies; studies in classical philology; Oriental series; studies in comparative literature; studies in English; studies in Romance languages; studies in education; studies in jurisprudence; psychological studies; studies and notes in philology and literature; business studies; theological studies; Radcliffe College monographs; contributions from the Jefferson Physical Laboratory; annals, bulletins, and annual reports of the astronomical laboratory; contributions from the zoological laboratory of the Museum of Comparative Zoology; and various periodical publications such as the Quarterly Journal of Economics.

Number of A. M., S. M., and Ph. D. degrees granted during the three years 1916-1918. The S. M. and Ph. D. degrees are listed according to the major subject pursued:

A. M.:	S. M.—Continued.	Ph. D.—Continued.
Total..... <sup>14</sup> 367	Sanitary engineer- ing..... 3	Biology..... 16
S. M.:	Forestry..... 1	Philology..... 52
Applied biology.. 2	Zoology..... 3	Economics..... 10
Botany..... 3	Total..... 36	Chemistry..... 17
Civil engineering. 8	Ph. D.:	Political science.. 5
Electrical engi- neering..... 10	Philosophy..... 20	Physics..... 8
Mechanical engi- neering..... 5	Mathematics..... 7	Geology..... 4
Mining engineer- ing and metal- lurgy..... 1	History..... 9	Pathology..... 1
	Anatomy..... 1	Medical sciences.. 1
	Education..... 10	Anthropology..... 3
		Total..... 164

#### Expenses:

Tuition.....	\$200
Tuition, Radcliffe College.....	200
Diploma fee (Ph. D.).....	30
Diploma fee, Radcliffe College (Ph. D.).....	50
Bond from students.....	400
Rooms in dormitories.....	50-200
Board at Memorial Hall, per week.....	7
Board at Foxcroft Hall, à la carte.....	
Board, Radcliffe College.....	216
Room, Radcliffe College.....	72-324

UNIVERSITY OF ILLINOIS, Urbana-Champaign, Ill., a city of about 26,000 inhabitants, 126 miles south of Chicago, 118 miles west of Indianapolis, 164 miles northeast of St. Louis. Founded, 1867; a "land-grant" institution; coeducational.

Admission: Bachelor's degree from a recognized college.

#### Degrees:

M. A. and M. S.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study with thesis giving evidence of research ability.

*Professional engineering degree.*—In addition to the usual master's degree, M. S., which is given for one year of postgraduate academic work in residence, professional degrees are given as indicated below:

For three years of successful professional work either in residence at or away from the university (the latter privilege being open, however, only to graduates of the University of Illinois), and the presentation of an acceptable thesis. The degrees are M. Arch., A. E., C. E., E. E., M. E., according to the course taken.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Physics laboratory especially equipped for conducting researches in mechanics, electricity, heat, and light; chemical laboratory well equipped for research in organic, quantitative, physiological, physical, and industrial chemistry; experimental

<sup>14</sup> Major subject not specified.

<sup>15</sup> Not charged to any student who has paid full tuition fee of \$200 for at least one year in Graduate Department.

<sup>16</sup> Not charged if examination for degree taken while in residence.

laboratories in genetics. The university has large funds, supplied in part by the State and in part by outside agencies for special investigations conducted by the Engineering Experiment Station. The State also supplies liberal funds for research in agriculture.

B. Library facilities: 444,783 volumes. Special collections relating to Illinois history; library economy; the classics and classical philology; German philology; Romance languages; pedagogy; statistics; Japan; German-American literature and history.

C. Facilities for the publication of research results; Bulletin of the Agricultural Experiment Station; Bulletin of the Engineering Experiment Station; State Laboratory of Natural Science Bulletin; Natural History Survey of Illinois; State Geological Survey Bulletin; State Geological Survey Monographs; State Water Survey Bulletin; Illinois Coal Mining Investigations Bulletin; Bulletins of the Bureau of Educational Research; Journal of English and German Philology; University Studies; Illinois Biological Monographs; University of Illinois Studies in the Social Sciences; University of Illinois Studies in Language and Literature; Illinois State Historical Survey.

Number of M. A., M. S., and Ph. D. degrees granted during the years 1916-1918, listed according to the major work pursued:

M. A.	M. S.—Continued.	M. S.—Continued.
Botany..... 4	Chemistry..... 42	Zoology..... 5
Chemistry..... 16	Ceramic engineer- ing..... 3	Total..... 144
Classics..... 16	Civil engineering..... 7	Ph. D.:
Economics..... 13	Dairy bacteriology..... 1	Animal nutrition..... 1
Education..... 27	Dairy husbandry..... 3	Bacteriology..... 1
English..... 30	Electrical engi- neering..... 7	Botany..... 8
Entomology..... 4	Entomology..... 6	Chemistry..... 31
German..... 11	Genetics..... 1	Economics..... 7
History..... 23	Geology..... 2	Education..... 7
Household science..... 3	Horticulture..... 3	English..... 6
Physics..... 6	Household science..... 4	Engineering..... 2
Political science..... 7	Mathematics..... 4	Entomology..... 3
Mathematics..... 8	Mechanical engi- neering..... 4	Genetics..... 1
Romance lan- guages..... 7	Municipal and san- itary engineer- ing..... 1	Geology..... 1
Sociology..... 5	Railway electrical engineering..... 1	German..... 2
Zoology..... 10	Railway mechan- ical engineering..... 1	History..... 3
Philosophy..... 1	Pathology and bacteriology..... 2	Horticulture..... 1
Transportation..... 2	Physics..... 2	Mathematics..... 6
Total..... 193	Theoretical and applied me- chanics..... 7	Philosophy..... 2
M. S.:		Physics..... 6
Agronomy..... 17		Political science..... 1
Animal husbandry..... 15		Psychology..... 2
Architecture..... 2		Romance lan- guages..... 1
Architectural en- gineering..... 1		Zoology..... 11
Botany..... 2		Total..... 103
Bacteriology..... 1		

**Expenses:**

Matriculation fee.....	\$10
Tuition, free.....	
Diploma fee.....	5
Board.....	100-200
Room.....	72-80
Total annual expense.....	375-500

**INDIANA UNIVERSITY**, Bloomington, Ind., a city of 11,595 inhabitants. A State institution, founded January 20, 1820

**Graduate School:**

Admission: Bachelor's degree from a standard college.

**Degrees:**

M. A.—One year of postgraduate study.

Ph. D.—Three years of postgraduate study; thesis.

**School of Law—Graduate course:**

Admission: A. B. degree from a standard college.

Degree: J. D.—Three-year course with superior record.

**School of Education—Graduate courses:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

A. M.—One year of postgraduate work.

Ph. D.—Three years of postgraduate study and thesis.

**Noteworthy equipment for particular lines of graduate study:**

A. Equipment and research funds: Waterman Institute for Scientific Research; Museum of South American Fresh-water Fishes; summer biological station. The university is affiliated with the Indiana Geological Survey, the Robert Long Hospital at Indianapolis, and the State Legislative Reference Bureau, through which organizations further opportunities for research may be had. The university has special funds for research in physical and biological sciences.

B. Library facilities: 128,383 volumes. Special library in international law. The library is strong in literary and scientific periodicals.

C. Facilities for the publication of research results: University of Indiana Studies; monographs on fresh-water fishes of South America; facilities for historical studies in connection with the Indiana Historical Survey and the Indiana Magazine of History.

Number of A. M. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major subject pursued:

A. M.:	A. M.—Continued.	Ph. D.:
Anatomy..... 4	Philosophy..... 3	Botany..... 2
Botany..... 4	Physics..... 4	Geology..... 3
English..... 38	Physiology..... 2	Mathematics..... 3
Chemistry..... 10	Political science.. 3	Political science.. 1
Education..... 16	Romance lan- guages..... 1	Physics..... 1
Economics..... 3	Social service.... 3	Sociology..... 2
German..... 4	Sociology..... 1	Total..... 12
History..... 18	Zoology..... 4	
Journalism..... 1	Total..... 131	
Latin..... 6		
Mathematics..... 6		

## Expenses:

Contingent fee (residents of Indiana), per semester.....	\$9.00
Contingent fee (nonresidents of Indiana), per semester.....	15.00
Diploma fee.....	5.00
Room, per week.....	1.25-2.50
Board, per week.....	4.00-5.50

STATE UNIVERSITY OF IOWA, Iowa City, Iowa, a city of 11,267 inhabitants. Founded, 1847; coeducational.

Admission: Bachelor's degree from a recognized college.

## Degrees:

M. A. and M. S.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

Advanced professional degrees are granted to graduates in engineering who have had four years' professional experience, one of which must have been in a responsible position and another of which may have been spent in graduate work.

Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds. Child-welfare research station; psychopathic hospital; psychology of music studio; museum of marine forms; laboratories in engineering, physics, biology, and medicine. The university has special appropriations for experiments in hydraulics, biochemistry, nutrition, and child welfare.

B. Library facilities: 170,412 volumes. Special collections in natural history, travel, and Americana.

C. Facilities for the publication of research results: University of Iowa Studies, containing Natural History Bulletin; Studies in Psychology; Studies in Social Sciences; Contributions from the Physical Laboratory; Humanistic Studies; Studies in Education; Studies in Medicine; Atlas and Progress of Research.

Number of M. A., M. S., and Ph. D. degrees granted during the three years, 1916-1918, listed according to the major work pursued:

M. A.	M. S.	Ph. D.
Education..... 15	Ophthalmology... 3	Political science.. 5
German..... 3	Industrial chem- 1	Experimental
English literature 3	istry..... 1	physics..... 4
Latin..... 3	Physics..... 12	Psychology of re-
Psychology..... 4	Entomology..... 2	ligion..... 1
English..... 5	Structural design. 1	Sociology..... 1
Economics..... 3	Internal medicine 2	Physical and elec-
Sociology..... 5	Theoretical mathe- 1	trochemistry... 1
Political science.. 5	matics..... 1	Economics..... 1
History..... 12	Geology..... 3	Psychology..... 2
Political economy 1	Botany..... 2	Animal biology... 2
Philosophy..... 2	Invertebrate zool- 1	Education..... 5
French..... 1	ogy..... 1	General geology.. 1
English literature 7	Mathematics..... 3	History..... 2
and language.... 7	Physiology..... 1	Biochemistry..... 1
Total..... 69	Zoology..... 1	Total..... 26
	Animal biology... 1	
	Embryology..... 1	
	Total..... 35	

## Expenses:

Matriculation fee .....	\$10
Tuition, free .....	
Diploma fee .....	10
Board, per week \$4 and upward .....	
Room, per month, \$6 and upward .....	

**IOWA STATE COLLEGE**, Ames, Iowa, a town of 6,270 inhabitants. Founded, 1858; a "land-grant" institution.

## Graduate Division:

Admission: Bachelor's degree from a recognized college.

## Degrees:

M. Sc. (in specified subjects).—One year of postgraduate work.

Ph. D.—Three years of postgraduate study; thesis.

The Engineering Division grants the following professional degrees at the completion of one year of postgraduate study and one year's responsible practice, or of five years of responsible practice: A. E., C. E., Ch. E., E. E., M. E., E. M.

The Graduate Division conducts advanced research and gives instruction in the five major lines of work of the college—agriculture, engineering, home economics, industrial sciences, and veterinary medicine.

## Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Engineering, chemical, agricultural, and veterinary laboratories; experiment stations in agriculture and engineering; natural science building. There are special research funds in veterinary science, engineering, and agriculture.

B. Library facilities: 85,000 volumes. Special collections in veterinary science, economic history, and animal husbandry.

Number of M. Sc. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major subject pursued:

M. Sc.	M. Sc.—Continued.	M. Sc.—Continued.
Botany..... 11	Dairy husbandry..... 8	All others..... 2
Zoology and entomology..... 5	Geology..... 1	Total..... 123
Chemistry..... 10	Agricultural engineering..... 1	Ph. D.:
Animal husbandry..... 23	Bacteriology..... 8	Botany..... 2
Physics..... 2	Mathematics..... 5	Animal husbandry..... 1
Agronomy..... 23	Farm management..... 3	Agronomy..... 2
Horticulture..... 10	Forestry..... 2	Total..... 5
Economic science..... 9		

## Expenses:

Tuition—per quarter (free to residents of Iowa), to nonresidents of Iowa .....	\$17.00
Incidental fee, per quarter .....	6.00
Laboratory fees .....	
Board and room, per week .....	5.50
Diploma fee .....	5.00
Total annual expense need not exceed .....	400.00



## OFFERINGS OF GRADUATE WORK.

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**JOHNS HOPKINS UNIVERSITY**, Baltimore, Md., a city of 733,526 inhabitants, 40 mi from Washington, the capital of the country. Founded, 1867.

### Graduate courses:

#### Under the Faculty of Philosophy:

Admission: Bachelor's degree from a recognized college.

#### Degrees:

A. M.—Two years of postgraduate study; essay.

Ph. D.—Three years of postgraduate study; dissertation.

#### Under the Faculty of Medicine:

Admission: Bachelor's degree from a recognized college, or knowledge equivalent to that implied by such a degree, including work in Latin, French, and German, biology, chemistry, and physics.

Degree: M. D.—Four years of postgraduate work.

#### Under the Department of Engineering:

Admission: Bachelor's degree from a recognized college.

#### Degrees:

Master of C. E., Master of E. E., Master of M. E.—Two years of postgraduate study.

Ph. D.—Three years of postgraduate study; dissertation.

#### Under the Faculty of Hygiene:

Admission: Bachelor's degree from a recognized college; degree of M. D. also required of candidates for D. P. H.

#### Degrees:

D. P. H.—Two years' work following M. D.; essay.

D. Sc. in Hygiene—Three years of work subsequent to bachelor's degree; dissertation.

From its foundation Johns Hopkins University has been primarily devoted to graduate study and is the pioneer in that field in this country. The university is one of the very few in the United States requiring two years instead of one for the master's degree.

### Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Well-equipped laboratories in anatomy, hygiene and public health; electrical, mechanical, and civil engineering. Candidate for the degree of Ph. D. may utilize the resources of the Medical School and the School of Hygiene and the Embryological Institute of the Carnegie Institution of Washington, D. C., with which the university is affiliated. There are special funds for investigations in geology and physiology.

Close connection between the university and the Johns Hopkins Hospital and Dispensary offers excellent clinical facilities and makes possible the emphasis placed upon laboratory and hospital training.

Special and mutual advantages arise from the close relationship between the School of Hygiene and Public Health and the International Health Board of the Rockefeller Foundation, particularly in field work and in the opportunities for investigation and training in tropical medicine and the control of special diseases.

B. Library facilities: 212,661 volumes. The chief collections are in philosophy; psychology; education; history; political economy; political science; classics, art, and archaeology; Sanskrit; Semitics; English; German; Romance languages; mathematics; physics; astronomy; chemistry; geology; civil engineering; biology; medical sciences; hygiene; electrical and mechanical engineering. Students also have

## Noteworthy facilities for particular lines of graduate study—Continued.

the use of other large libraries in Baltimore, including the Peabody Library, 237,693 volumes and pamphlets, and the Enoch Pratt Free Library, 366,116 volumes. The Library of Congress and other large libraries located in Washington, D. C., may also be easily visited.

C. Facilities for the publication of research results; Johns Hopkins University Press, which publishes: American Journal of Insanity; American Journal of Mathematics; American Journal of Philology; Beiträge zur Assyriologie und semitischen Sprachwissenschaft; Hesperia (Schriften zur Germanischen Philologie); Elliott monographs in the Romance languages and literatures; Johns Hopkins Hospital Reports; Johns Hopkins University Studies in (a) Education, (b) Historical and Political Series; Modern Language Notes; Reprint of Economics Tracts; Reports of the Maryland Geological Survey; Terrestrial Magnetism and Atmospheric Electricity.

Number of M. A. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major subject pursued:

M. A.:	M. A.—Continued.	Ph. D.—Continued.
English..... 5	Spanish..... 1	Plant physiology.. 7
Physics..... 6	Total..... 39	Political science.. 4
Political economy.. 1	Ph. D.:	Economics..... 8
Latin..... 2	Assyrian..... 1	Mathematics..... 6
Philosophy..... 1	Chemistry..... 21	Geology..... 5
French..... 5	Sanskrit..... 1	Latin..... 2
German literature.. 2	Electrical engi- neering..... 1	German..... 1
Bacteriology..... 1	French..... 4	Hebrew..... 3
Political science.. 4	Physics..... 6	Italian..... 2
Pathology..... 1	Zoology..... 3	Physiology..... 1
History..... 4	Education..... 2	German philology.. 2
Zoology..... 1	History..... 3	German literature.. 2
Education..... 3	English..... 4	Total..... 94
Geology..... 1	Psychology..... 3	
Mechanical engi- neering..... 1		

## Expenses:

Tuition.....	\$150
Tuition in Medical School and the School of Hygiene.....	250
Diploma fee, Ph. D.....	10
Diploma fee, M. A.....	10
Board, per week, \$5 and upward.	
Room, per week, \$2 and upward.	

The university provides five scholarships, yielding free tuition, for students from Latin-American countries who wish to pursue graduate courses, and five for students (graduate or undergraduate) from France.

UNIVERSITY OF KANSAS, Lawrence, Kans., a city of 12,456 inhabitants; a State institution. Date of first opening, 1866; coeducational.

Admission: Bachelor's degree from a recognized college.

## Degrees:

A. M. and M. S.—One year of postgraduate study; thesis.

\* If M. A. precedes the Ph. D., \$5 only will be charged.

## OFFERINGS OF GRADUATE WORK.

### Degrees—Continued.

Ph. D.—Three years of postgraduate study; thesis.

C. E., Mech. E., Chem. E., E. M., Elec. E., conferred on graduates in engineering, after three years of professional engineering service in positions of responsibility, and the presentation of a thesis.

### Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Entomological and biological collections; museum of natural history and paleontology; chemical and engineering laboratories. Special funds for research in industrial chemistry and engineering. Biological, geological, and chemical surveys are supported by State appropriations.

B. Library facilities: 125,212 volumes. The library is primarily a working library for undergraduates, but investigators also have ample opportunities for carrying on original work. Good collection of books in history and chemistry.

C. Facilities for the publication of research results: University of Kansas Humanistic Studies; the University Geological Survey Bulletins; the University Entomological Bulletins; the Bulletin on the Engineering Experiment Station; University of Kansas Science Bulletin.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

A. M.	A. M.—Continued.	M. S.
Latin..... 7	Home economics.. 2	Anatomy.....
Bacteriology..... 3	Journalism..... 2	Bacteriology.....
Botany..... 6	Mathematics..... 9	Chemistry.....
Chemistry..... 14	Physics..... 3	Education.....
Economics..... 3	Physiology..... 1	Electrical engineering.....
Education..... 13	Romance languages..... 3	Total..... 14
English..... 32	Sociology..... 11	Ph. D.:.....
Entomology..... 6	Zoology..... 12	Sociology..... 1
Fine arts..... 1	Total..... 156	
Geology..... 2		
German..... 12		
History..... 14		

### Expenses:

Matriculation fee (residents of Kansas).....	\$5
Matriculation fee (nonresidents of Kansas).....	10
Incidental fee (residents of Kansas).....	10
Incidental fee (nonresidents of Kansas).....	20
Diploma fee.....	5
Board, per week.....	7
Room, per month.....	4-15

LELAND STANFORD JUNIOR UNIVERSITY, Stanford University, Calif., 30 miles southeast of San Francisco, a city of 508,410 inhabitants. Founded, 1885; coeducational.

Admission: Bachelor's degree from a recognized college.

### Degrees:

A. M.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

Engineer (Civil, Mechanical, Electrical, Chemical, Mining).—One year of postgraduate work in the department of applied sciences; thesis.

## Noteworthy facilities for particular lines of graduate study:

- A. Equipment and research funds: Laboratories for research in aerodynamics and mechanical engineering, entomology, geology, paleontology, and metallurgy and mining. The university also has an endowment for psychological research and a fund for flour investigations.
- B. Library facilities: 295,000 volumes. Special collections in ichthyology, ornithology, transportation, German language and literature, certain fields of 16th and 17th Century European literature, Australian history, the French Revolution, British and American Government documents, English and American law, medicine, geology, mineralogy, geography, and mining and metallurgy.
- C. Facilities for the publication of research results: Leland Stanford Junior Publications.

Number of A. M. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

A. M.:		A. M.—Continued.		Ph. D.:	
Botany.....	6	Philosophy.....	1	Botany.....	1
Chemistry.....	5	Physics.....	1	Chemistry.....	3
Economics.....	8	Romance lan-		Geology.....	1
E d u c a t i o n		guages.....	10	Latin.....	2
(graphic art)....	1	Zoology.....	5	Physics.....	2
Education.....	23	Entomology.....	7	Education.....	1
English.....	31	Geology.....	3	Economics.....	2
Germanic lan-		German.....	11	Total.....	12
guages.....	2	Pathology.....	1		
History.....	13	Greek.....	2		
Latin.....	11				
Mathematics.....	7	Total.....	148		

## Expenses:

Tuition free.....	
Incidental fee, per quarter.....	\$3
Degree fee.....	5
Board and room, at university, per month.....	32-37
Board and room, outside of university, per month.....	30-40
Total annual expense.....	500-600

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich., a city of 19,516 inhabitants. Founded, 1837; coeducational.

Admission: Bachelor's degree from a recognized college.

## Degrees:

- A. M. and M. S.—One year of postgraduate work.
- M. S. in Forestry.—One year of postgraduate work after B. S. in Forestry.
- M. L. D.—One year of postgraduate work after A. B.
- M. S. in Engineering.—One year of postgraduate work after B. S.
- M. S. in Architecture.—One year of postgraduate work after B. S. in Architecture.
- M. S. in Public Health.—One year of postgraduate work after M. D. To obtain this degree a student must also have an A. B. or B. S.
- C. E., M. E., E. E., Ch. E., Nav. Arch., Mar. E., Arch. (At least five years must have elapsed after the bachelor's degree before registration for engineering degree. At least one year must have been spent in

## Degrees—Continued.

responsible charge of some professional work.)—(One year of advanced study; thesis.

Ph. D. or Sc. D.—Three years of postgraduate work; thesis.

D. P. H.—Two years after M. D.; thesis.

## Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Specially equipped laboratories in botany, zoology, chemistry, forestry, psychology, geology, physics, anatomy, medical subjects, aeronautics and all branches of engineering. The university possesses a well-equipped astronomical observatory, a museum of zoology, a University General Hospital, and a Psychopathic Hospital.

B. Library facilities: 400,830 volumes. Special collections: American history, Elizabethan literature, English drama, Carlyle literature, Goethe literature, political economy (earlier period, especially of Germany), and the Philippine Islands.

C. Facilities for the publication of research results: University of Michigan Humanistic Series.

Number of A. M., M. S., and Ph. D. degrees granted during the three years 1916-1918. Listed according to the major work pursued:

A. M.	M. S.	Ph. D.
Actuarial science..... 4	Actuarial science..... 1	Anatomy..... 2
Anatomy..... 2	Anatomy..... 2	Astronomy..... 2
Bacteriology..... 1	Bacteriology..... 6	Bacteriology..... 1
Botany..... 13	Botany..... 7	Botany..... 5
Chemistry..... 2	Chemistry..... 17	Chemical engi- neering..... 1
Economics..... 24	Chemical engi- neering..... 4	Chemistry..... 13
Education..... 20	Electrical engi- neering..... 1	Civil engineering..... 1
English..... 38	Geology..... 2	Economics..... 3
Fine arts..... 2	Marine engineer- ing..... 2	Education..... 1
French..... 3	Mathematics..... 1	Engineering me- chanics..... 1
German..... 17	Mineralogy..... 1	English..... 1
Greek..... 3	Naval architec- ture..... 1	Fine arts..... 1
Histology..... 1	Pathology..... 1	German..... 4
History..... 23	Pharmacology..... 1	Greek..... 2
Latin..... 22	Pharmacy..... 5	History..... 4
Mathematics..... 12	Physics..... 12	Latin..... 1
Music..... 3	Physiological chemistry..... 1	Mathematics..... 4
Oratory..... 13	Psychology..... 1	Physics..... 5
Pathology..... 2	Zoology..... 3	Physiological chemistry..... 1
Pharmacy..... 1	Engineering..... 47	Political science..... 1
Philosophy..... 7	Architecture..... 3	Rhetoric..... 7
Physics..... 7	Landscape design..... 2	Romance lan- guages..... 1
Political science..... 3	Municipal admin- istration..... 2	Zoology..... 4
Psychology..... 3	Forestry..... 19	
Rhetoric..... 16	Public health..... 6	
Romance lan- guages..... 2		
Semitics..... 2		
Sociology..... 7		
Spanish..... 1		
Zoology..... 8		
Total..... 262	Total..... 147	Total..... 66

**Expenses:**

Matriculation fee, residents of Michigan.....	\$10
Matriculation fee, nonresidents of Michigan.....	25
Annual fee, residents of Michigan, for women, \$45; for men.....	49
Annual fee, nonresidents of Michigan, for women, \$65; for men.....	69
Diploma fee, residents of Michigan.....	10
Diploma fee, nonresidents of Michigan.....	25
Board, about \$6 a week.	
Room, \$2 to \$3 a week.	
Total annual expenses, estimated.....	600-700

**UNIVERSITY OF MINNESOTA**, Minneapolis, Minn., a city of 380,582 inhabitants. Founded, 1851; a "land-grant" institution; coeducational.

**Graduate School:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

M. A., and M. S.—One year of postgraduate study; thesis.

Ph. D.—At least three years of postgraduate study; thesis.

**College of Engineering and Architecture:**

Professional degrees: C. E., M. E., E. E., Architect.—Five year courses; thesis. At end of fourth year B. S. in Engineering, or B. S. in Architecture may be awarded.

**School of Chemistry:**

Professional degree: Chem. E.—Five-year course in applied chemistry. At end of fourth year B. S. may be awarded.

**College of Pharmacy—Graduate courses:****Degrees:**

M. S. in Phm.—Five year course.

D. Sc. in Phm.—Six-year course. At end of fourth year B. S. in Phm. awarded.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and researchs funds: City and University Hospitals; Institute of Anatomy; Mayo Foundation for Medical Education and Research; laboratories in zoology, medicine, and engineering; extensive experiment farms and plots; U. S. Bureau of Mines. The income from an endowment of nearly \$2,000,000 for the Mayo Foundation for Medical Education and Research is devoted entirely to the support of graduate work in medicine.

B. Library facilities: 285,110 volumes. Special collections in the history of 17th Century England, and adequate facilities along a large number of other lines.

C. Facilities for publication of research results: Research publications of the University of Minnesota; School of Mines Experiment Station Bulletins; Bulletins of the Minnesota Geological Survey; Agricultural Experiment Station Bulletins; Minnesota Botanical Studies.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1910-1918, listed according to the major work pursued:



# OFFERINGS OF GRADUATE WORK.

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M. A.:	M. S.:	Ph. D.:
Economics..... 10	Agricultural chem- 6	Inorganic chem- 1
Romance lan- 8	istry..... 5	istry..... 2
guage..... 16	Soils..... 3	Anatomy..... 2
English..... 15	Agronomy..... 12	Physics..... 2
History..... 1	Chemistry..... 1	Organic chemis- 2
Rhetoric..... 4	Geology..... 3	try..... 1
Political science.. 4	Plant pathology.. 1	History..... 2
Latin..... 4	Agricultural edu- 1	Botany..... 2
Comparative phi- 2	cation..... 1	Anthropology.... 1
bology..... 2	Entomology..... 1	Education..... 1
German..... 6	Pediatrics..... 1	Botany..... 3
Anatomy..... 5	Physiology..... 1	English..... 2
Animal biology... 3	Mathematics..... 1	Economic geology 1
French..... 2	Farm manage- 3	Horticulture..... 1
Sociology..... 4	ment..... 3	Surgery..... 1
Education..... 10	Economic geolo- 1	Plant pathology.. 1
Botany..... 2	gy..... 4	Psychology..... 1
Physiology..... 1	Botany..... 1	Romance (Span- 1
Mathematics..... 3	Medicine..... 1	ish)..... 1
Psychology..... 3	Petrology..... 1	Biochemistry..... 1
Romance (French) 3	Pathology..... 2	Soils..... 2
Romance (Span- 1	Electrical engi- 1	Chemistry..... 2
ish)..... 1	neering..... 1	Physical chemis- 1
Romance..... 1	Farm crops..... 6	try..... 1
Physics..... 2	Surgery..... 1	Geology..... 1
Astronomy..... 1	Dairy and animal 1	
Social and civic 1	husbandry..... 1	
work..... 1	Horticulture..... 1	
Scandinavian..... 2	Agricultural eco- 1	
American history.. 1	nomics..... 1	
Bacteriology..... 1		
Total..... 112	Total..... 58	Total..... 30

## Expenses:

Tuition free.

Incidental fees:

Graduate School.....	\$30.00
College of Engineering.....	60.00
School of Mines and Chemistry.....	55.00
College of Pharmacy.....	55.00
Board, per week.....	4.50-6.00
Room, per month.....	6.00-20.00
Total annual expense.....	350.00-950.00

UNIVERSITY OF MISSOURI, Columbia, Mo., a city of 10,392 inhabitants. Founded, 1839; a "land-grant" institution; coeducational.

## Graduate School:

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

The faculty of the Graduate School has charge of all graduate work in the university and offers graduate instruction in the groups of classical.

**Graduate School—Continued.**

languages, modern languages, philosophy and experimental psychology, education, history and political science, mathematical and physical sciences, biological sciences, art, home economics, agriculture, and engineering.

**School of Engineering—Graduate courses:**

Professional degrees of C. E., E. E., M. E., Ch. E., A. E.—Five-year courses.

B. S. in Engineering awarded at end of four years.

**School of Mines and Metallurgy (at Rolla)—Graduate courses:**

Admission: Bachelor's degree in the subject to be pursued.

Degrees: E. M., Met. E.—Two years of postgraduate study; thesis.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and research funds: Experiment stations for agriculture and engineering; the School of Social Economy for training social workers; laboratories in agriculture and zoology.

B. Library facilities: 168,400 volumes. Special collection of U. S. public documents. The library of the State Historical Society is open for the use of students.

C. Facilities for the publication of research results: The University of Missouri Studies; University of Missouri Bulletin; publications of the Agricultural Experiment Station and of the Engineering Experiment Station.

Number of A. M. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major subject pursued:

A. M.:		A. M.—Continued.		Ph. D.:	
Agricultural chem-		History.....	8	Botany.....	1
istry.....	3	History of art....	1	Education.....	2
Animal hus-		Home economics..	4	History.....	1
bandry.....	9	Horticulture.....	9	History of art....	1
Anatomy.....	2	Latin.....	2	Horticulture.....	2
Astronomy.....	4	Mathematics.....	5	Agricultural chem-	
Botany.....	4	Manual arts.....	1	istry.....	2
Chemistry.....	6	Philosophy.....	1	Educational psy-	
Dairy husbandry.	13	Physics.....	2	chology.....	1
Economics.....	1	Physiology.....	6	Entomology.....	1
Education.....	16	Political science..	2	Horticulture.....	1
English.....	12	Romance lan-		Latin.....	1
Entomology.....	3	guages.....	2	Physiology.....	1
Farm crops.....	6	Sociology.....	8	Sociology.....	1
Farm management	3	Soils.....	3		
Geology.....	5	Veterinary science	1	Total.....	15
Greek.....	1	Zoology.....	5		
German.....	2	Total.....	147		

**Expenses:**

Incidental fee.....	\$30
Diploma fee.....	2
Board, at university, per week.....	4-6
Room, university dormitory, per year.....	20-35
Board and room, outside university, per week.....	5-6
Total annual expense.....	360

## OFFERINGS OF GRADUATE WORK.

UNIVERSITY OF NEBRASKA, Lincoln, Neb., a city of 54,924 inhabitants. Founded, 1863.  
 "land-grant" institution.

### Graduate College:

Admission: Bachelor's degree from a recognized college.

#### Degrees:

- A. M., M. S.—One year of postgraduate study; thesis.
- Ph. D.—Three years' of postgraduate study; thesis.
- Graduate Teacher's Diplomasis granted for advanced work in education.
- M. S. in Agricultural, Civil, Electrical, or Mechanical Engineering.—One year of postgraduate study; thesis.
- Agri. E., C. E., E. E., M. E.—One year of postgraduate study and thesis for graduates of the university of at least five years' standing who hold a bachelor's degree and have been engaged in professional work.

### Teachers' College.—Graduate Course:

University Teachers' Certificate.—Three years' work in Teachers' College. A bachelor's degree from the university is a prerequisite, and the student must show exceptional scholastic ability and fitness for teaching.

### College of Law.—Graduate Course:

Degree: J. D.—Holders of baccalaureate degrees from colleges and universities of recognized standing and LL. B. from this university of from one to five years' standing, having spent at least one year in legal professional pursuits; thesis.

### Noteworthy facilities for particular lines of graduate study:

- A. Equipment and research funds: Laboratories in chemistry, physics, botany, and bacteriology; special facilities for study of the geology and paleontology of the Platte Region of the United States. Special funds exist for medical research.
- B. Library facilities: 148,000 volumes. Special library and source material on the French Revolution.
- C. Facilities for the publication of research results: The University of Nebraska Studies; Studies from the Zoological Laboratory; Reports of the Botanical Survey of Nebraska; the Flora of Nebraska; the Nebraska Geological Survey.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.	M. A.—Continued.	M. A.—Continued.
Educational theory and practice. 2	Philosophy..... 5	American history. 10
Education..... 11	Farm management 4	English history... 1
Germanics..... 6	Sociology..... 5	Rhetoric..... 1
Agricultural chemistry..... 2	Botany..... 7	Roman history and literature.. 1
Chemistry..... 11	Bacteriology..... 2	Germanic language and literature..... 1
History..... 8	Zoology..... 3	English literature. 2
Political science and sociology... 4	European history. 2	Economics..... 2
Geography..... 1	Pharmacology.... 1	Physics..... 1
English language and literature.. 3	Geography..... 2	English and American history.... 1
	Political science. 2	
	English language and literature.. 10	
	Animal husbandry 1	

M. A.—Continued.		M. S.:	Ph. D.:		
Greek.....	2	Chemistry.....	1	Chemistry.....	2
Geology.....	1	Agricultural chem-		Philosophy.....	1
Philosophy.....	5	istry.....	2	Education.....	2
Jurisprudence and		Civil engineering..	1	Zoology.....	1
public law.....	1	Plant pathology..	1	Plant pathology..	1
Total.....	111	Total.....	5	Greek.....	1
				Total.....	8

## Expenses:

Matriculation.....	85
Tuition, free.	
Diploma fee.....	10
Board, per week.....	5.7
Room, per month.....	5.10
Minimum annual expense.....	100

**NEW YORK UNIVERSITY, New York, N. Y., a city of 5,621,151 inhabitants. Founded, 1831.**

## Graduate School:

Admission: Bachelor's degree from a recognized college.

## Degrees:

M. A. and M. S.—Not less than one year of postgraduate study; thesis.

Ph. D. and Sc. D.—Not less than three years of postgraduate study; thesis.

## School of Applied Science—Graduate courses:

Admission: B. S. (in specified branches of engineering).

Degrees: C. E., M. E., Chem. E.—One year of postgraduate study; thesis.

## School of Law—Graduate courses:

Admission: to J. D.—Bachelor's degree from a recognized college.

to LL. M.—LL. B. degree.

to J. S. D.—Bachelor's degree from a recognized college and LL. B.

## Degrees:

J. D.—Three-year course.

LL. M.—One year of postgraduate study after LL. B.

J. S. D.—One year of postgraduate study after LL. B.

## University and Bellevue Hospital Medical College—Graduate courses:

Admission: M. D. degree.

Degree: D. P. H.—One year's work in public health and sanitation after M. D.

## School of Commerce, Accounts, and Finance—Graduate course:

Admission: to M. C. S.—B. C. S. degree.

to M. B. A.—Bachelor's degree from a recognized college.

## Degrees:

M. C. S.—One year of postgraduate work after B. C. S.; thesis.

M. B. A.—For those holding bachelor's degree from recognized college, two years of postgraduate study.

## School of Pedagogy:

Admission: Bachelor's degree from a recognized college.

## Degrees:

Pd. M.—Not less than one year of postgraduate study plus two years' teaching experience.

Pd. D.—Not less than two years' postgraduate study plus three years' teaching experience; thesis.

# OFFERINGS OF GRADUATE WORK.

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Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Havenmeyer Chemical Laboratory. The university cooperates with the Brooklyn Botanic Garden for botanica research and with the Department of Public Health of New York City for research in public hygiene and bacteriology. There is also opportunity for research in the biological sciences in connection with the University and Bellevue Hospital Medical School.

B. Library facilities: 83,000 volumes. Special collections in Germanic literature, Semitic languages, the classics, and the Romance languages and literatures. A number of other large libraries located in New York, including the New York Public Library (1,065,196 volumes) and the Columbia University Library, are available for the use of students.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.	M. A.—Continued.	Ph. D.:
Latin..... 10	Psychology..... 7	Latin..... 3
Greek..... 2	Education..... 18	Semitics..... 2
Semitics..... 3	Total..... 121	English..... 7
English..... 13		History..... 3
French..... 4	M. S.:	Economics..... 1
German..... 11	Chemistry..... 10	Sociology..... 2
History..... 18	Physics..... 1	Philosophy..... 2
Economics..... 8	Geology..... 14	Education..... 15
Government..... 2	Bacteriology..... 3	Chemistry..... 1
Sociology..... 24	Total..... 28	Total..... 36
Philosophy..... 1		

## Expenses:

### Tuition—

Graduate School (based on amount of work taken)—

For each 1-hour course..... \$12

For each 2-hour course..... 24

Law School, LL. M., J. D., and J. S. D. courses..... 154

School of Commerce, Accounts, and Finance (based on amount of work taken)..... 17-202

School of Pedagogy (based on amount of work taken)—

For each 1-hour course..... 12

For each 2-hour course..... 24

### Examination fee—

Graduate School..... 20

University and Bellevue Hospital Medical College..... 25

School of Commerce, Accounts, and Finance..... 20

School of Pedagogy..... 20

School of Law..... 20

Board..... 210-350

Room..... 100-300

Total annual expense..... 600-900

**NORTHWESTERN UNIVERSITY**, Evanston and Chicago, Ill. The Graduate School is located at Evanston, a city of 37,215 inhabitants, 12 miles north of the center of Chicago, and continuous with it. Founded, 1851.

Admission: Bachelor's degree from a recognized college.

**Degrees:**

- M. A., M. S.—One year of postgraduate study; thesis.  
 Ph. D.—Three years of postgraduate study; thesis.  
 M. S. T.—Three years in theological school; one year of postgraduate work; thesis.

**Law School—Graduate course:**

Degree: LL. M.—One year of postgraduate study after LL. B.; thesis.

**Noteworthy facilities for particular lines of graduate study:**

- A. Equipment and research funds: Research laboratory in bacteriology; theoretical engineering facilities. The university possesses a foundation for research in medicine.  
 B. Library facilities: 112,000 volumes. Special collections in Greek and Latin classics, foreign legal reports (in the Gary Library of Law), and Hispanic-American history and institutions. Other large libraries, located in Chicago, including the Newberry Library, 370,831 volumes; John Crerar libraries, 380,070 volumes; and the Chicago Public Library, 806,172 volumes, are easily accessible to graduate students.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918; listed according to the major work pursued:

M. A.:		M. A.—Continued.		Ph. D.:	
Economics.....	3	Political science..	2	Physics.....	1
Astronomy.....	2	Zoology.....	3	Zoology.....	2
Education.....	8	Biblical literature..	2	Bacteriology.....	1
Law.....	4	Philosophy.....	1	German.....	2
Classical languages	5	Botany.....	4	History.....	1
English.....	9	Geology.....	1	Medicine.....	1
History.....	8	Physiology.....	1	Total.....	8
German.....	8	Total.....	81		
Old Testament....	12				
Romance lan- guages.....	1	M. S.:			
Chemistry.....	2	Chemistry.....	6		
Psychology.....	3	Geology.....	1		
Mathematics.....	2	Total.....	7		

**Expenses:**

Matriculation.....	\$5
Tuition (based on courses taken), not to exceed.....	50
Diploma fee.....	10
Board, per week.....	0-8
Room, per month.....	10-15
Total annual expense.....	425-750

**OHIO STATE UNIVERSITY**, Columbus, Ohio, a city of 237,031 inhabitants. A "land-grant" institution, founded, 1870; coeducational.

**Graduate School:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

- A. M. and M. Sc.—One year of postgraduate study.  
 Ph. D.—Three years of postgraduate study; thesis (dissertation).



## Graduate School—Continued.

## Degrees—Continued.

Arch. E., M. E., E. E., Cr. E., Ch. E., M. Arch.—

- (1) Four years of professional experience and thesis, or
- (2) M. Sc. in Engineering, followed by two years' experience and thesis, or
- (3) One year of experience, one year at university in engineering, and thesis.

## College of Law—Graduate course:

Degree: J. D.—Three-year course, for those having bachelor's degree from a recognized college and 50 hours' merit in the College of Law.

## Noteworthy facilities for particular lines of graduate study:

- A. Equipment and research funds: Lake Laboratory for research in biological sciences; the geological museum, containing an excellent collection of specimens illustrative of the geology of Ohio. There are special funds for research in agriculture.
- B. Library facilities: 198,295 volumes. Special collections in animal husbandry, the American Civil War, German history, and economics. Other large libraries, including the Ohio State Library, 235,218 volumes, are located in Columbus.
- C. Facilities for the publication of research results: Ohio State University Studies.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.	M. A.—Continued.	M. Sc.—Continued.
Anatomy..... 3	School adminis- tration..... 16	Rural economics.. 4
Bacteriology..... 1	Sociology..... 6	Soils..... 2
Botany..... 4	Zoology..... 5	Zoology..... 7
Chemistry..... 21	Total..... 168	Total..... 78
Economics..... 7		
English..... 27	M. Sc.:	M. Sc. in Public Health..... 3
Entomology..... 1	Agronomy..... 5	
French..... 11	Animal husbandry 3	Ph. D.:
Geology..... 3	Bacteriology..... 4	Botany..... 1
German..... 4	Botany..... 7	Chemistry..... 13
History..... 8	Chemistry..... 24	English..... 1
History of educa- tion..... 6	Civil engineering. 1	Entomology..... 1
Home economics.. 1	Economics..... 1	German..... 2
Latin..... 12	Electrical engi- neering..... 6	Philosophy..... 2
Mathematics..... 8	Entomology..... 6	Psychology..... 1
Mineralogy..... 1	Farm crops..... 4	Sociology..... 1
Philosophy..... 1	Home economics.. 2	Zoology..... 1
Physics..... 3	Physics..... 1	Total..... 23
Political science.. 5	Public health.... 1	
Psychology..... 12		

## Expenses:

Incidental fee.....	\$30. 00
Diploma fee.....	10. 00
Board, per week.....	4. 50
Room, per month.....	8. 00
Total annual expense.....	400-450

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**UNIVERSITY OF PENNSYLVANIA.** Philadelphia, Pa., a city of 1,823,158 inhabitants.  
Founded, 1740.

**Graduate School:**

Admission: Bachelor's degree from a recognized college in the United States, or the equivalent for foreign institutions.

**Degrees:**

A. M. and M. S.—One year of postgraduate study.

Ph. D.—Three years of postgraduate study; thesis.

**Towne Scientific School—Graduate courses in architecture:**

Admission: B. S. in Architecture.

Degree: M. S. in Architecture—One year's postgraduate study after B. S. in Architecture.

**Law School—Graduate course:**

Admission: LL. B. degree.

Degree: LL. M.—One year after LL. B.; thesis.

**School of Medicine—Graduate course:**

Admission: Graduation from a recognized medical school.

Degree: Dr. P. H.—One year's work in public hygiene, following graduation from a recognized medical school.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and research funds: Laboratories in the fields of natural science; Wistar Institute of Anatomy and Biology; Evans Dental Institute; illustrative material for ethnology and archaeology in the University Museum; the Henry Phipps Institute for the study and treatment of tuberculosis. Funds of the Harrison Foundation are available for the promotion of research. Students may also avail themselves of the facilities possessed by the museum of the Academy of Natural Sciences, the White Williams Foundation for Social Research, the zoological garden, and the Commercial Museum. The University Graduate Medical School offers extensive opportunities for study and research along medical lines.

B. Library facilities: 451,025 volumes. Special collections in philosophy and ethics, modern spiritualism, law, finance, and political economy, philology, the classics, English literature, American drama, Germanic philology and literature, Dante, Petrarch, and Tasso, Hebrew and Rabbinical literature, Arabic and Syriac literature, Assyriology, Mexican and Central American archaeology, Welsh literature and philology, Russian literature and history, biology, geology, mathematics, civil engineering, medicine, surgery, dermatology, veterinary medicine, American history and institutions, ethnology. Other large libraries located in Philadelphia are the Philadelphia Free Library, 551,586 volumes; the library of the American Philosophical Society, 63,000 volumes; Mercantile Library, 211,000 volumes; library of the Pennsylvania Historical Society, 202,000 volumes; library of the College of Physicians and Surgeons; Wistar Institute Library; and the library of the Academy of Sciences.

C. Facilities for the publication of research results: Series in philology and literature, philosophy, political economy and public law, astronomy and history; contributions from the botanical laboratory, zoological laboratory, department of mathematics, and the laboratory of hygiene; publications of the Wistar Institute. Publications affiliated with the university; Annals of the American Academy of Political and Social Science; Proceedings of the University Museum; contributions from Laboratory of Clinical Medicine; contributions from the Laboratory of Neuropathology; and the Psychological Clinic.

# OFFERINGS OF GRADUATE WORK.

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Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.	M. A.—Continued.	Ph. D.
Anthropology..... 3	Romanics..... 2	Greek..... 1
Economics..... 27	Research medi-	Botany..... 4
Education..... 23	cine..... 1	Chemistry..... 3
Psychology..... 16	Geology..... 1	Economics..... 11
Romanics..... 4	Physics..... 2	Education..... 2
Bacteriology..... 3	Transportation... 1	English..... 11
Botany..... 4	Geography and	Germanics..... 10
Chemistry..... 1	industry..... 2	History..... 8
English..... 26	Total..... 215	Latin..... 5
Greek..... 1		Mathematics..... 4
History..... 22		Medical science... 5
Latin..... 10	M. S.:	Physics..... 1
Mathematics..... 4	Psychology..... 1	Political science... 7
Medical science... 3	Bacteriology..... 1	Psychology..... 8
Philos. phy..... 2	Botany..... 4	Philosophy..... 1
Semitics..... 2	Zoology..... 2	Romanics..... 1
Sociology..... 45	Chemistry..... 1	Semitics..... 2
Germanics..... 3	Architecture..... 1	Zoology..... 6
History of re-	Physiological	Sociology..... 5
ligions..... 2	chemistry..... 1	Total..... 95
Political science.. 4	Total..... 11	
Zoology..... 1		

## Expenses:

Matriculation.....	\$5
Tuition—	
Graduate School (based on amount of work taken) not to exceed.....	150
Architecture.....	200
Law.....	200
Medicine.....	200
Diploma fee.....	25
Board and room.....	200-350
Total annual expense.....	450-625

PRINCETON UNIVERSITY, Princeton, N. J., a city of 5,917 inhabitants. Founded, 1746.

## Graduate School:

Admission: Bachelor's degree from a recognized college.

## Degrees:

A. M.—At least one year of exclusively resident graduate study.

Ph. D.—A minimum of two years of graduate study. Requirements for the degree can rarely be completed in less than three years; thesis.

Graduate courses are offered in the following subjects: Philosophy, psychology, history and politics, economics and social institutions, art and archaeology, linguistics, Greek, Latin, English, modern languages, mathematics, astronomy, physics, chemistry, geology, biology; also courses in Semitics and Greek in Princeton Theological Seminary.

The Graduate College is one of the best-equipped groups of university buildings exclusively for graduate students to be found in the country. A liberal

endowment and fellowship fund make it possible for Princeton to offer to able students exceptional opportunities for graduate work in arts and sciences.

**School of Electrical Engineering:**

Admission: First degree from an accredited college, or equivalent work in mathematics, physics, and chemistry.

Degree: E. E.—Two years of postgraduate study.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and research funds: Advanced instruction and research in the liberal arts and sciences, exclusive of professional or technical studies.

B. Library facilities: 397,126 volumes. Special collections relating to the classics, the American Civil War, the recent World War, oriental philosophy and history, enamel-form documents, and statistics.

C. Facilities for the publication of research results: Princeton University Press.

Number of M. A. and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.:	M. A.—Continued.	Ph. D.—Continued.
English..... 18	Classics..... 6	Classics..... 4
Mathematics..... 6	History..... 3	English..... 4
Physics..... 3	Institutions and politics..... 2	Biology..... 3
History and politics..... 39	Economics..... 5	Physics..... 6
Philosophy..... 19	Astronomy..... 1	Art and archaeology..... 2
Modern languages..... 7	Politics..... 1	Psychology..... 1
Biology..... 5	Psychology..... 1	Geology..... 4
Art and archaeology..... 5	Total..... 139	Philosophy..... 2
Chemistry..... 10	Ph. D.:	Chemistry..... 6
Geology..... 3	Mathematics..... 1	History..... 1
Economics and social institutions..... 5	Economics..... 3	Total..... 37

**Expenses:**

Matriculation fee.....	\$5
Tuition, full-time students, per year.....	100
Tuition, part-time students, per year.....	40
Diploma fee.....	5
Board, per week.....	7
Room (including light and heat).....	52-256
Total annual expense.....	420-600

**UNIVERSITY OF TEXAS, Austin, Tex.,** a city of 31,876 inhabitants. Founded, 1882; coeducational.

**Graduate School:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

A. M.—One year of postgraduate study; thesis.

M. B. A.—One year of postgraduate study; thesis; successful business experience.

M. J.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

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## College of Engineering—Graduate courses:

Admission: Bachelor's degree in the subject to be pursued.

Degrees: M. S. in Architecture. M. S. in Architectural Engineering, C. E.

E. E.—One year of postgraduate study and research.

## Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Laboratories in chemistry and zoology

B. Library facilities: 135,308 volumes. Special collections of books in Southern history, Texas history, Mexican history, 16th, 17th, and 18th century authors, chemistry and zoology.

C. Facilities for the publication of research results: University of Texas bulletins, including the Humanistic Series; bulletins of the Bureau of Municipal Research and Reference; and bulletins of the Bureau of Economic Geology and Technology.

Number of M. A. and Ph. D. degrees granted during the three years 1916-1918, listed according to major work pursued:

M. A.:	M. A.—Continued.	Ph. D.:
English..... 14	Zoology..... 5	German philology. 1
Chemistry..... 10	Geology..... 1	Mathematical
History..... 12	German..... 3	analysis..... 1
Education..... 10	Physics..... 1	Plant pathology... 1
Spanish..... 3	Government and	Total..... 3
General literature. 3	economics..... 1	
Government..... 4	Mathematics..... 4	
Greek..... 3	German language. 1	
Philosophy..... 6	Total..... 85	
French..... 1		
Economics..... 3		

## Expenses:

Fees range from \$25 to \$75 in various colleges and schools.

Tuition free.

Room and board cost between \$30 and \$50 a month.

Graduation fee, if paid at time of matriculation, \$2.50; if paid at time of graduation, \$5.00.

UNIVERSITY OF VIRGINIA, Charlottesville, Va., a city of 10,688 inhabitants, at the junction of the Chesapeake & Ohio and the Southern Railroads. Founded, 1819.

Admission: Bachelor's degree from a recognized college.

## Degrees:

M. A. and M. S.—One year of postgraduate study.

Ph. D.—Three years of postgraduate study; thesis.

## Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Chemical laboratories; Leander McCormick Astronomical Observatory; economic geology and petrography.

There is a close affiliation with the Virginia Geological Survey.

B. Library facilities: 90,000 volumes. Fair collections in medicine, history, political science, and economics.

Number of M. A., M. S., and Ph. D. degrees during the three years 1916-1918:

M. A.:	M. S.:	Ph. D.:
Total..... <sup>18</sup> 54	Total..... <sup>18</sup> 10	Astronomy..... 2
		Chemistry..... 1
		English..... 1
		History..... 1
		Total..... 5

<sup>18</sup> M. A. and M. S. subjects not specified.

**Expenses:**

Tuition, free (In college and graduate departments) to students from Virginia.

Tuition, nonresidents.....	\$135
University fee, residents.....	10
University fee, nonresidents.....	40
Room.....	50-135
Board, per month.....	18-30
Total annual expense.....	\$30-650

**UNIVERSITY OF WASHINGTON**, Seattle, Wash., a city of 315,652 inhabitants. Founded, 1861; coeducational.

**Graduate School:**

Admission: Bachelor's degree from a recognized college.

**Degrees:**

M. A. and M. S.—One year of postgraduate study; thesis.

Ph. D.—At least three years of postgraduate study; thesis. Limited at present to three departments: Chemistry, English, Botany.

**College of Education—Graduate courses:**

Admission: Bachelor's degree.

Degrees: M. A. or M. S. in Education.—One year after A. B. or B. S.

**College of Business Administration—Graduate course:**

Admission: Bachelor's degree.

Degree: Master of Business Administration.—One year of postgraduate study after award of bachelor's degree.

**College of Engineering—Graduate courses:**

Admission: Bachelor's degree.

Degrees: M. S. in C. E., M. S. in M. E., M. S. in E. E., M. S. in Ch. E.—one year of postgraduate study after bachelor's degree; thesis.

The professional degrees S. E., E. E., and M. E. are conferred without resident study upon holders of the bachelor's or master's degree after at least two years and one year, respectively, of successful professional work and the presentation of a thesis.

**College of Pharmacy—Graduate course:**

Admission: B. S. degree.

Degree: M. S. in Pharmacy.—One year of postgraduate study after B. S.; thesis.

**College of Forestry—Graduate course:**

M. S. F. awarded one year after B. S. degree.

**College of Mines—Graduate course:****Degrees:**

M. S. in Mining Engineering.—One year of postgraduate study; thesis.

E. M., Met. E.—Professional degrees conferred without resident study upon holders of the bachelor's degree who have been engaged in professional work at least three years and who present a thesis.

**Noteworthy facilities for particular lines of graduate study:**

A. Equipment and research funds: Marine station for study of marine life; close cooperation with the United States Bureau of Mines Experiment Station, Engineering Experiment Station.

B. Library facilities: 82,401 volumes. Other libraries, including the Seattle Public Library, containing approximately 250,000 volumes, are open to students.

C. Facilities for the publication of research results: University of Washington publications; Publications of the Engineering Experiment Station.



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Number of M. A., M. S., and Ph. D. degrees granted during the three year 1916-1918, listed according to the major subject pursued:

M. A.:	M. S.:	M. S.—Continued.
English..... 12	Bacteriology..... 3	Mining engineer-
Scandinavian..... 3	Physics..... 4	ing.....
French..... 2	Botany..... 5	Electrical engi-
Education..... 18	Zoology..... 7	neering.....
German..... 6	Chemistry..... 13	Metallurgy.....
History..... 5	Home economics..... 1	Forestry.....
Economics..... 1	Psychology..... 1	Pharmacy.....
Psychology..... 1	Mathematics..... 2	Education.....
Philosophy..... 2	Civil engineering..... 1	
Political science..... 2	Chemical engi-	
	neering..... 1	
Total..... 52		Total..... 50
		Ph. D.:.....
		Total..... 10

## Expenses:

Tuition (\$10 per quarter of 12 weeks).....	\$30.00
Graduation fee.....	5.00
Board, at university, per month.....	22.50
Room, at university, per year.....	54.00
Minimum annual expense.....	350.00

UNIVERSITY OF WISCONSIN, Madison, Wis., a city of 38,378 inhabitants, and the capital of Wisconsin. Founded, 1848; a "land-grant" institution; coeducational.

Admission: Bachelor's degree from a recognized college.

## Degrees:

M. A., M. S., Ph. D.—A minimum of one year of postgraduate study.

Ph. D.—At least three years' postgraduate study; thesis.

Dr. P. H.—Two years' postgraduate work in public health for those holding M. D. from an approved medical school.

C. E., M. E., E. E., Ch. E., E. M.—One year of postgraduate study in engineering and thesis. Graduates of the College of Engineering of the University of Wisconsin who have spent three years in professional work—at least one of them in a responsible position—and who present a thesis, may also receive the advanced engineering degree without resident study.

In cooperation with the legislative reference department of the Wisconsin Free Library Commission, the library school of the university offers a special course of training for legislative and municipal reference work and the various sociological phases of library service. The course is intended for college graduates with special aptitude and personal qualifications for this type of library service who have a definite preparation in political science, economics, and sociology.

## Noteworthy facilities for particular lines of graduate study:

- Equipment and research funds: Laboratories in forest products (unique), physics, plant pathology, geology, chemistry, zoology, engineering, and agriculture; excellent facilities for research work in history and economics.
- Library facilities: 263,000 volumes. Other large libraries, including the library of the State Historical Society, containing 208,000 volumes, are available for the use of students.
- Facilities for the publication of research results: The University of Wisconsin Studies; Publications of the Washburn Observatory; publications of the Agricultural Experiment Station; Transactions of the Wisconsin Academy of Sciences.

<sup>10</sup> Subjects not specified.

Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major work pursued:

M. A.:	M. S. -Continued.	Ph. D. -Continued.
Psychology..... 2	Agricultural eco- nomics..... 9	History..... 7
History..... 27	Political economy. 2	Physics..... 4
Physics..... 8	Zoology..... 3	Education..... 3
Education..... 19	Chemistry..... 16	Botany..... 3
Inorganic chemis- try..... 1	Chemistry of farm products..... 1	English..... 1
Romance lan- guages..... 7	Agricultural chem- istry..... 10	French..... 1
Botany..... 10	Geology..... 2	Plant pathology... 12
English..... 35	Agricultural bac- teriology..... 7	Political science and history.... 1
French..... 7	Medicine..... 7	Germanics..... 6
Plant pathology... 1	Animal husbandry 8	Mathematics..... 1
Sociology..... 10	Experimental breeding..... 8	Latin and Greek.. 1
Chemical engi- neering..... 1	Agronomy..... 8	Political science.. 2
Germanics..... 31	Soils..... 7	Agricultural eco- nomics..... 1
Mathematics..... 7	Electrical engi- neering..... 2	Political economy 5
Latin..... 10	Home economics. 10	Zoology..... 5
Political science.. 9	Physical educa- tion..... 2	Chemistry..... 4
Agricultural eco- nomics..... 2	Agricultural edu- cation..... 3	Chemistry of for- est products.... 4
Political economy. 15	Anatomy..... 2	Geography..... 1
Spanish..... 2	Pathology..... 2	Agricultural chem- istry..... 4
Greek..... 5	Structural engi- neering..... 1	Geology..... 3
Zoology..... 3	Pharmacology and toxicology.... 1	Agricultural bac- teriology and soils..... 5
Chemistry..... 7	Hydraulic engi- neering..... 1	Medicine..... 1
Chemistry of forest products..... 1	Pharmacy..... 1	Experimental breeding..... 1
Geography..... 1	Horticulture..... 2	Pharmacy..... 1
Journalism..... 6	Agricultural engi- neering..... 1	Physiological chemistry..... 1
Agricultural chem- istry..... 1	Physiological chemistry..... 1	Economics..... 1
Geology..... 3	Economic ento- mology..... 3	German literature. 1
Philosophy..... 3	Economics..... 1	Agricultural and inorganic chem- istry..... 1
Agricultural bac- teriology..... 1	Hydraulic and sanitary engi- neering..... 1	Chemical technol- ogy..... 1
Medicine..... 2	Total..... 145	Food chemistry.. 1
Manual arts..... 1	Ph. D.:	Psychology and education..... 1
Home economics. 1	Psychology and education..... 1	Mathematical physics..... 1
Total..... 238		Total..... 88
M. S.:		
Physics..... 1		
Education..... 2		
Botany..... 6		
Plant pathology... 9		
Sociology..... 1		
Chemical engi- neering..... 1		
Mathematics..... 3		

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## Expenses:

Tuition (free to residents of Wisconsin).....	\$12
Incidental fee.....	50
Room at university.....	75-100
Board at university.....	180-240

YALE UNIVERSITY, New Haven, Conn., a city of 162,519 inhabitants. Founded, 1701

## Graduate School:

Admission: Bachelor's degree from a recognized college.

### Degrees:

M. A.—One year of postgraduate study; essay (minimum requirement).

M. S.—Two years of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis (minimum requirement).

C. P. H.—One year of postgraduate study; thesis (minimum requirement).

Dr. P. H.—Two years of postgraduate study; thesis (minimum requirement).

C. E., M. E., E. E., E. M., Met. E., Chem. E.—Five-year courses (or one year beyond bachelor's degree) in civil, mechanical, electrical, mining, metallurgical, and chemical engineering. Thesis.

## School of Forestry:

Admission: Bachelor's degree from a recognized college, or, in certain cases, three years of college work.

Degree: M. F.—Two years' course. Students holding a degree in forestry from an institution of high standing may receive the master's degree at the end of one year.

## Divinity School:

Admission: Bachelor's degree from a recognized college, or its full equivalent.

Degree: B. D.—Three-year course. Students may also enroll in the Graduate School as candidates for M. A. and Ph. D.

## School of Law:

Admission: As candidates for a degree, bachelor's degree from a recognized college (except for Yale College seniors). As special students not candidates for degrees, two years' collegiate work.

### Degrees:

L. L. B.—Three-year course.

B. C. L.—Three-year course; and equivalent amount of work to that for L. L. B. For B. C. L., courses in Roman law are prescribed, but not for L. L. B.

M. L.—One year's study for graduates of recognized law schools; thesis.

Jur. D.—One year's study for those holding a bachelor's degree and who are graduates of recognized law schools; thesis.

D. C. L.—Two years' postgraduate study, and in addition to requirements for admission to Jur. D., preliminary examination in Roman law and history, Latin, and either French or German; thesis.

## Noteworthy facilities for particular lines of graduate study:

A. Equipment and research funds: Peabody Museum of Natural History; laboratories for zoology, physics and chemistry, forestry, pathology, and for mechanical, electrical, civil, and mining engineering. In astronomy, physics, and biology the university has large funds available for the

## Noteworthy facilities for particular lines of graduate study—Continued.

prosecution of research work. In chemistry and engineering there are several lines of connection with the laboratories of industrial corporations.

The School of Forestry, founded in 1900, is strictly a graduate school and offers thorough training in all branches of forestry. Special endowments provide for the departments of silviculture, lumbering, and forest management. In addition to the usual classroom and laboratory subjects, a large part of each student's time is spent in practical field work, for which the school has at its disposal a tract of 1,000 acres at Milford, Pa., the forests of the New Haven Water Co., at New Haven, aggregating 9,000 acres, the school forest at Keene, N. H., and localities in the Adirondack Mountains of New York, and in the Southern States. The courses in tropical forestry are of especial interest to foreign students, and several students from South American countries have been authorized by their governments to attend the School of Forestry for this reason.

**B. Library facilities:** 1,100,000 volumes. Special collections: Oriental, Arabic, Chinese, Japanese, Russian, and Latin-American books and manuscripts; the libraries for paleontology, Roman law, Scandinavia, classical literature, political science, music, and the Aldis collection of American belles lettres; a large collection of books on anthropology and ethnology; 17th and 18th Century works by German authors; an unusual collection of American colonial newspapers; notable collections of Goethe editions and of Elizabethan writers. The university also has notable collections of early Italian paintings, of Greek and Etruscan vases, and of Babylonian tablets.

**C. Facilities for the publication of research results:** Yale University Press. Number of M. A., M. S., and Ph. D. degrees granted during the three years 1916-1918, listed according to the major subject pursued:

M. A.	M. A.—Continued.	Ph. D.—Continued.
Chemistry..... 4	Botany..... 1	Bacteriology and hygiene..... 6
Geology..... 1	Physics..... 1	Physics..... 5
German..... 1	Geological sciences..... 1	Social sciences..... 6
History..... 6		Mathematics..... 2
Romance languages..... 1	Total..... 46	Zoology..... 4
Semitic languages..... 3		Geological sciences..... 5
Social sciences..... 3	M. S.: Total..... 11	Romance languages..... 2
Zoology..... 5	Ph. D.:	Geology..... 4
History of religion..... 2	Classics..... 6	Germanic languages..... 1
Philosophy and education..... 3	Chemistry..... 14	Philosophy and education..... 2
English..... 4	English..... 18	Botany..... 2
Bacteriology..... 1	Physiological chemistry..... 6	Geography..... 1
Classics..... 1	Semitic languages..... 6	German..... 1
Philosophy..... 1	History..... 5	Total..... 97
Mathematics..... 1	Philosophy..... 5	
Physiological chemistry..... 1	History and philosophy of religion..... 2	
History and philosophy of religion..... 3		

\* Subjects not specified.

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## Expenses:

## Tuition—

Graduate School.....	\$125
School of Forestry, junior year.....	150
School of Forestry, senior year.....	125
School of Law.....	150
Diploma fee.....	10
Board, per week, \$6 and upward.	
Room, per week, \$2 and upward.	
Total annual expense.....	400-1,000

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